THE
MEDICAL AND SURGICAL
REPORTER.

No. 1993. MAY 18, 1895. VOL. LXXII—No. 20

ORIGINAL ARTICLES.

INTRA-CAPSULAR FRACTURE OF THE HIP-JOINT.*

G. A. BAXTER, A.M., M.D., CHATTANOOGA, TENN.

The fracture is usually at the small part of the neck, though occasionally in the very young there may be a separation of the head. The line is more often transverse but may be in any direction, transverse, oblique, irregular, and in one instance reported, spinal. There may be interlocking of fragments, though this is very rare; when it does occur it is the lower frament into the upper one. Generally a large, smooth, convex surface presents on one fragment and a depression on the other. The head may be comminuted by the lower fragment.

The usual displacement is of the shaft upwards, backwards and outwards, with or without laceration of the capsular ligament; however, this is varied, in the proportion of one in every five cases, to an upward direction of the lower fragment. This displacement is a gradually increasing one, from one-half to one inch at first, increasing during the first two weeks to one-and-a-half to two inches, In impaction there may be a twisting of the one or other fragments. A complete over-lapping of fragments may occur.

The position of the limb is almost pathognomonic of this fracture; the foot widely everted with shortening and a total inability (usually) to bear the slightest weight upon it, so that if the patient is in the upright position the body is supported on this side by the hands and not the leg. A further investigation will show an inability to lift the foot forward, as in the act of walking, or to raise the heel from the bed when lying down. In the impacted variety this may be modified to the extent of allowing the patient to stand upon the feet for a while, or to walk some distance before the leg gives way. There is pain, varying in character, but especially severe upon the slightest movement or pressure at the point of injury. There is a flattened condition of the hip on the injured side. Crepitus can generally be obtained by rotation inwards with slight extension to bring the fractured ends into apposition. This is not a constant symptom, and the search for it should always be carefully made lest an irreparable injury be inflicted by unlocking a possible impaction. The trochanter rotates in a shorter radius, acting from the point of fracture rather than the head of the bone. It is above Nelaton's line in the triangular space described by Dr. Bryant, and nearer a line drawn in the axis of the body on the injured side. (Morris' measurement.)

Histologically, the neck of the femur is constructed of cancellous tissue surrounded by compact tissue, the latter varying in thickness at different parts of the neck as well as on its anterior and

*Read before the Tennessee State Medical Society, April, 1895.

posterior aspects. On the anterior aspect, the compact tissue is thinnest where it joins the head, and becomes thicker posteriorly until it joins with the intertrochanteric line, which itself is compact tissue. On the posterior aspect of the neck the compact tissue is thickest where it joins the head, and becomes gradually thinner as it proceeds backwards and outwards, losing itself in the cancellous structure underneath the great trochanter, which is really an apophesis for the attachment of the external muscles and adds little to the strength and resistance of the bone at this point. This makes the two weakest places in the bone just posterior to the head in the small part of the neck, where the anterior layer of compact tissue is thinnest, and at the base of the neck just above the trochanter, where the posterior layer grows thinnest before losing itself in the cancellous tissue underneath the great trochanter. These are the points at which fractures usually occur, hence we are forced to recognize these histological differences as predisposing causes to fractures at the upper end of the femur.

Beyond the age of fifty, the bone undergoes radical change in its structure, particularly at this point. The canals grow larger, the compact tissue thinner, the spongy tissue being filled with fat. The size is not altered, but the specific gravity becomes less and the resisting power of the bone to strain or force greatly diminished. This is not an absorption of animal tissue alone, but a senile atrophy; the changes which effect this condition being, chiefly, the enlargement of the canals and the thinning of the compact tissue, which latter becomes so thin at times as to be faintly translucent. Hence we find that the great majority of these fractures occur beyond fifty. To this cause is attributed its greater frequency in women, as the changes referred to occur earlier and proceed to a greater extent in women than in men.

Disease also, such as rhumatoid arthritis, contributes to or causes this fracture, though more often the head of the bone is absorbed in this disease in the hip-joint.

Another change which occurs with age in both sexes, is an increasing acuteness in the angle between the neck and the shaft of the bone, the neck being found at times almost at a right angle to the shaft in the very old. The bone would undoubtedly stand a less degree of strain or violence with the neck at an acute angle with the shaft than at an oblique angle, but the fact of such change has been disputed by Bodet after investigations which led him to assert that the changes in the angle as a result of age were of so few degrees that as a causation it would have little effect. It is possible, however, that the difference in the angle between the sexes may explain, in part, the greater frequency of this fracture among women.

The anterior-posterior diameter in the neck is smaller than in the shaft of the bone, and smaller within the capsule than at the base of the neck.

The great prominence of the trochanter major, with direct violence, transfers directly to the weakest portion of the bone, force which would otherwise be modified or dissipated by the thick, elastic cushion of muscles which cover the joint.

The depth of the acetabulum makes it act as a fulcrum for the head of the femur, increasing the strain upon the neck in force transmitted from below, in direct blows upon the trochanter and in strain from sudden, violent, muscular action, transforming force which would otherwise result in a strain or dislocation into fracture.

The exciting cause of fracture of the neck of the femur varies from the slightest degree of muscular strain transmitted through the limb from below, or in leverage, the limb being caught in adduction or abduction, to the greatest amount of direct force received directly upon the trochanter major. Stumbles, missteps, the jar received in stepping from the curbstone to the street, catching the foot in the carpet in turning or walking, loss of balance, twists of the body in emptying a pail of water, turning over in bed, bending to one side to keep from falling, falls on the knees, side of the thigh or on the buttock, muscular action in the movements of the thigh in adduction, abduction or rotation—all have been held responsible for a degree of violence sufficient to produce the intra-capsular fracture. Malgaine asserted that exaggerated muscular action plays an important causative part at all times in the production of these fractures; in some cases the fall being secondary and in consequence of fracture produced by muscular action. The intra-capsular fracture more often occurs from the action

of indirect force and lighter degrees of violence, and in the aged and infirm; without the capsule fractures occur more often in the young and healthy, and the exciting cause is more generally great and direct violence received directly on the trochanter, possibly transmitted from below.

The general question of repair of this fracture by bony union, has been a subject of difference between surgeons; the difficulty of its satisfactory solution being a divergence of opinion in the interpretation of the processes which have taken place in the specimens of this fracture in existence. Owing to absorptive changes in the head and neck at the seat of fracture, it is said to be impossible to determine beyond cavil: 1st, whether the bone has been broken, or whether the changes are not simply the result of absorption; 2d, whether, conceding a break, they were intra-capsular fractures purely; or, 3d, is the union by fibrous or bony tissue?

There can be little doubt that in early life, up to the age of seventeen years, there have been cases of repair by bony union, but these cases are supposed by some to have been separation of the epiphyseal head with impaction, not fractures at the small part of the neck, or those rare cases with little or no periosteum torn and consequently very little if any displacement of fragments. The great majority of surgeons of the present day, claim that union takes place but very rarely, if at all; though close fibrous union does occur at times. The head of the bone, however, maintains life through a branch of the internal circumflex artery in the untorn portion of the periosteal covering, it being a fact that the periosteum is seldom torn completely around, the anterior-inferior portion escaping, and is capable of and does produce callous.

In view of these facts, even barring those rarer cases of impaction (which would undoubtedly have a better chance for union of this nature even though the periosteum was torn completely around, for the cancellous structure has reproductive power of its own), it does seem that with close and proper approximation and with absolute immobilization it might be possible to get some kind of bony union here. The real difficulty, unquestionably, is not the inability of the fragments to unite through defective vitality, but the heretofore impossibity of complete immobilization, and the chance of approximation we were forced to accept as the best which could be done. The changes in the neck of the bone which predispose to fracture, certainly do not of themselves decide this question in the negative, though, in any special case, either incomplete approximation, deficient immobilization, or the completeness of the periosteal tear might do so.

The attainment of close fibrous union of this fracture, giving a fair degree of usefulness to the limb, is an undoubted possibility. My own conclusions are that could approximation and immobilization be maintained, there is nothing to prevent union by bone at this point, since, 1st, the upper fragment is alive and capable of granulation; 2nd, approximation, heretofore, with most of the methods devised (extension and rotation inward or outward, as the case may require for eversion or inversion of the foot) has been almost chance work, owing to our want of control of the upper fragment and its general displacement inwards by the pressure of the lower fragment, and our neglect of local control of the upper end of the lower fragment. These methods correct the upward and backward displacements, but they leave an outward displacement due to the continued action of the hip muscles in this direction, still unconquered. Approximation being still incomplete immobilization could do no good whatever; 3rd, the rarer cases of reported union have been, must have been (with a chance approximation possible only), either cases where the periosteal covering was untorn or torn but slightly; cases of impaction, or cases of fracture partly within and partly without the capsular ligament.

Whatever the possibility in these cases, the result, in the past, has been an almost universally bad one—disability more or less, the patient suffering all degrees of functional interference from a permanent confinement in bed, to the use of a crutch or cane—with close fibrous union and little deformity but always with an amount of shortening from one-half to two inches. The limb may even retain considerable usefulness when union has failed entirely, owing to the support which the Y ligament and the quadrator femoris gives to the body.

The differentiation between intra and

extra-capsular fracture depends much upon the history of the case, the symptoms differing more in degree than in character, and it is asserted that an actual diagnosis between the two is a matter of little moment since the treatment is practically the same in both varieties. Such reasoning should be condemned, as the hypothesis upon which it is based is untrue. The treatment for both these varieties of fracture need not necessarily be the same, or rather the treatment which accomplishes a good result in the extra-capsular fracture has hitherto been an almost total failure in the intra-capsular, and there are points of differentiation of value for self-satisfaction and prognosis. Without being exhaustive, a few of these symptoms will be enumerated that the contrast may be established for the purpose of precaution both in prognosis and treatment, as will be shown hereafter to be necessary.

The intra-capsular fracture is nearly always seen in the very old (fifty and upwards), while the extra-capsular fracture is more often seen before this period. The fracture within the joint is most common in women, while the fracture without the joint is equally common to both sexes. The degree of violence in the intra-capsular variety is usually very slight, which is seldom the case in the extra-capsular variety. The internal variety is produced from below (generally) by force transmitted through the limb, the external by force directly upon the trochanter. In the intra-capsular variety the shortening is small at first, gradually increasing with the progress of time; in the extra-capsular the shortening is immediate and complete. In the one case we have pain, redness and swelling referred to the hip joint, in the other to the trochanter.

The only dislocation with which intra-capsular fracture would be likely to be confused, is the pubic. This would give shortening and eversion, but the shortening would be greater and the eversion less in the dislocation. In intra-capsular fracture the displacement, if it exists, would be a drawing upwards, backwards and outwards of the lower fragment, while in dislocation the head of the bone would be felt in the groin. In fracture we would have extra mobility with probable crepitus; in dislocation, diminished mobility and absence of crepitus. The pain existing in fracture would be ascribed to the joint, in dislocation to the groin.

In those exceptional cases where the foot is inverted in this fracture, the appearance of the hip alone (flattening) would indicate the impossibility of dislocation in the upward and backward direction. In any degeneration, as that of tuberculosis or rheumatoid arthritis, the history of previously existing disease of this character should lead to a proper conclusion.

The consideration of treatment involves the question of the possibility of union by bone at this point of fracture in the femur. An avowal of hopelessness of this point means helplessness, and it would become our duty, after a short interval for the subsidence of acute inflammatory symptoms, to abandon all restraint or confinement instead of making a pretense of that which, under this supposition, can never be accomplished.

But is such a supposition correct? Many surgeons reasoning from the almost universal result, non-union, have jumped to the conclusion that there could be none; and have attributed the failures to a want of vitality in the upper fragment of the fractured bone. This may be, and doubtless is the cause of non-union in some few case where the violence has been very great, producing comminution of the upper fragment or tearing the periosteum completely apart around the whole circumference of the bone; but, that it is not universally the case is proven by the few cases of union of bone which have taken place in early life, by the preservation of vitality in the upper fragment in all cases not comminuted, with even partially preserved periosteum, or uncomplicated with general conditions of disease tending to retard or defeat bone repair. It is further proved by the cases of cartilaginous union, as this is but the uncompleted process of union by bone. That the changes occurring as the result of age simply, is not a hindrance to union is proven by the fact that union by fibrous tissue is not limited to the cases which occur in early life, but in old age as well.

It is a well known fact that a fracture seldom occurs here, so severe or extensive that there is not some portion of the periosteum remaining untorn. This untorn portion is usually on the under and anterior aspect, and in it is rescued, for the

nutrition of the upper fragment, one of the branches of the internal circumflex artery. This branch and the blood through the ligamentum teres is sufficient to give a healthy vitality to the detached head of the bone, and if it is ample to do this, it is equally plain that there should, under other proper conditions, be a production of callous.

Some of the specimens of fibrous union in existence, show a want of perfect approximation and a bridging over of an intervening space by fibrous union in spite of imperfect approximation, the fibers taking an oblique course rather than a straight direction with the axis of the neck portion of the lower fragment. This seems to prove that with perfect approximation and retention there would have been unquestionably bony union where fibrous union was accomplished in these cases, as the failure to preserve these two requisites (approximation and retention) is the main cause in the production of fibrous, rather than bony, union elsewhere.

The acknowledgment of the possibility of callous production between the fragments of this fracture, leads to the confession of an attainable bony union, and we ask ourselves, what are the conditions required? To answer this question we must again inquire as to the displacement. In by far the greater number, the displacement is upwards and backwards (shortening), with external rotation (oversion); in rare cases upward and forward displacement and internal rotation; in either case the upper fragment is pushed to one side by the lateral pressure of the displaced lower fragment. In this condition, it is pertinent to ask, does extension and inward rotation (the correction of eversion and shortening), or extention and outward rotation in those rarer forms of displacement, correct the deformity entirely? Unquestionably they do overcome shortening and correct eversion by opposing gravity of the limb and counteracting the effect of the rotator muscles in twisting the limb; but they do not overcome the outer displacement, as made by such muscles as the gluteus medius on the upper end of the lower fragment, or bring into apposition with the already partially displaced upper fragment, except it be by the merest chance; this chance being sufficient to account, together with impaction, for the very few cases of partial approximation as evinced by ligamentous union. Evidently then there is something more required in the treatment of this fracture than extention and rotation in the reduction, and extention, rotation and counter-extention for its retention, which form the only principles maintained in nearly all the ordinary splints in common use for its correction. There needs must be, in addition to these principles, local internal pressure over the upper end of the lower fragment to overcome the remaining force in outward exertion and to bring it into relation with the upper fragment at all, besides continued pressure in line with the axis of the neck to keep it there. The bulging trochanter seems the most convenient place to place such pressure, and it is possible to imagine this attained by any of the splints of the straight variety to which has been previously adjusted a pad for the trochanter, or with the suspension variety with pad or even sandbag pressure. It is even possible that the sandbags ordinarily used with the latter variety to keep the body straight, has by pressure, unconsciously to the surgeon, contributed towards a nearer approximation and consequently ligamentous union in a few cases. That surgeons of the past recognized something unattained, is evidenced by the number of retention splints which have been devised; and that they were correct is proven by the almost total failure to obtain union by any of them. It remained for Dr. Nicholas Senn to correct this cause of non-union, and also to perfect the plaster splint so as to leave little to be desired in meeting the indications present. If we may hope for intracapsular union at all, we must look for it through this apparatus, or one fulfilling these indications equally as well.

I quote a description of this device from De Costa. "To secure perfect immobility at the seat of fracture, it is not only necessary to include in the dressing the fractured limb and entire pelvis, but it is absolutely necessary to include the opposite limb as far as the knee and to extend the dressing as far as the cartilage of the eighth rib. The splint is incorporated in the plaster dressing and it must be carefully applied, so that the compress, composed of a well cushioned pad with a stiff unyielding back, rests directly upon the trochanter major, and the pressure, which is made with a set-

screw, is directed in the axis of the femoral neck. Lateral pressure is not applied until the plaster is completely set. Syncope should be guarded by the administration of stimulants. As soon as the plaster has sufficiently hardened to retain the limb in proper position, the patient should be laid upon a smooth, even mattress, without pillows under the head, and in non-impacted fractures the foot is held in a straight position and extention is kept up until lateral pressure can be applied. No matter how snugly a plaster of Paris dressing is applied, as the result of shrinkage it becomes loose, and without some means of making lateral pressure it would become necessary to change it from time to time in order to render it efficient. But by incorporating a splint in the plaster dressing, this is obviated and the lateral pressure is regulated day by day, by moving the screw, the proximal end of which rests on an oval depression in the center of the pad."

Concerning the final results in these cases but little more need be said. The results for good union in the past, as has been said, are practically negative. As to full restoration, it has been asserted that there never has been a proven case of full restoration with complete bony union, full length, natural position and strength. While this is true and a large number of these cases remain permament fixtures in bed, there is yet a large proportion who regain, under even the unfavorable conditions, a large amount of functional activity. Either the broken ends of the bones became smoothed by rubbing against each other, or the lower fragment makes for itself a new socket of fibrous tissue and the outer fasciculus of the Y ligament and the tendon of the obturator support the weight of the body upon the shaft below. The permanent condition varies from that of bedridden helplessness to crutches or cane, but always with perceptible shortening and consequent lameness. I must enter my vigorous protest against the do-nothing policy so frequently followed in the very old, where accepting death or non-union as inevitable, the patient is made as comfortable as seems possible under such a policy, in any position as to the limb, under the hopeless thought that it is all useless anyway. Such policy is worse than it seems without thought, for it contributes directly to the production of hypostatic pneumonia and fatty embolism; subjects the patient to the tortures of continued confinement in bed and ends in concomitant results at this age—uncleanliness, bedsores and exhaustion, when all might be releived by a proper application of the Senn device, at least until time had eradicated the immediate results of such an injury (active inflammatory action), and transferred him to that safer and less helpless state of non-union which has been the finale in these cases, thus giving to him at the same time whatever chance remained for him for the production of bony or fibrous union. With this splint the patient can be handled with impunity.

The manner of death in this fracture, when it occurs, is from hypostatic pneumonia, fatty embolism or exhaustion; neither needs elucidation here.

In conclusion, let me say this paper is not intended as an eulogy on a man, but is written to emphasize a method, which if rightly understood and appreciated will bring about marked change in the final results in this fracture.

ACUTE CROUPOUS PNEUMONIA.*

J. S. CAIN, M.D., NASHVILLE, TENN.

I have selected this common, every-day and probably somewhat "shelf-worn" disease as the subject of my essay, for two reasons: First, It is a common disease of universal prevalence, with which every practitioner has had more or less to do practically; with which every one is more or less familiar, and has usually well defined ideas as to its nature and treatment. It is, therefore, a subject which should elicit a general discussion and develop individual experiences and observations,

*Read before the Tennessee State Medical Society, April, 1895.

which is always more valuable in societies than recitations from books and standard authorities. Second, I have selected it because I do not believe that the profession is agreed as to many vital points connected with it; I have seldom heard the subject discussed, in a medical association, or even in a professional consultation, that there were not as many different, and often conflicting, opinions as to its nature and treatment, as there were speakers; each believing that he alone was correct. If my humble effort shall arouse a thorough discussion of this important disease by this learned body (an is my hope) I shall be very much disappointed if the same honest differences of opinion do not exist here as elsewhere.

As there can be but one true theory upon these points, this great diversity argues that many must necessarily be in the wrong; and that there exists a necessity for more information upon the subjects; which can be only arrived at by free comparison of individual views and observations. These are my apologies for presenting a subject which in these times of new ideas and fads, may be looked upon as somewhat trite and obsolete.

I will further explain that in treating this subject in the manner essential to the requirements of the twenty minute rule, I shall not attempt system or elaborateness, but shall devote my remarks to points connected with its nature and treatment, about which there may exist diversities of opinion and differences in practice; and leave out of consideration such points and theories as are very generally conceded by the profession. I shall not allude to the other varieties of pneumonia; and shall, in this variety, omit everything which is not explanatory of its nature or suggestive of its treatment.

Croupous Pneumonia is so-called on account of the inflammatory process which attends it, being of the peculiar nature known as croupous inflammation, which is characterized by an exudate upon the surface of the mucous membrane involved, of a fibro-plastic material poured out under the stimulation of the inflammatory action.

This exudate instead of forming a coating or pseudo-membrane as it does upon free and more open surfaces under similar conditions, here accumulates in the lung alveoli and inter-vesicular terminals of the bronchiæ, filling up, rendering them solid, and obliterating for the time the porous and spongy lung parenchyma, and constituting the characteristic feature of the disease, *hepatization* or *solidification*. This condition, being always found embracing a lobe of a lung, or a large area of tissues in continuity in one or both lungs, has given to the disease another of its synonyms, *lobar pneumonia*; which stands in contradistinction to lobular, catarrhal, insular of broncho pneumonia.

The extent of lung involvement, indeed the existence of the disease almost in toto, depends upon predisposing influences, such as have lowered dynamic forces or impaired vital resistance. Hence the disease occurs almost wholly in persons laboring at the time of its invasion, under the enervating or vitiating influence of some other form of diseases, such as measles, whooping-cough, typhoid fever la grippe, etc.; or in those whose health and vital resistance have been impaired by previous attacks of this or some other disease; also are those predisposed whose vital resistance has been impaired by exposure, irregular habits and general debilitating causes; and above all are those predisposed who have lingering in their systems certain vices, such as malarial toxæmia, and that engendered by habitual abuse (or rather use) of alcoholic liquors. In a long term of practice in a malarious region, I have observed that a great proportion or the pneumonia subjects of winter and spring were of the old malarial subjects of the previous summer and fall.

It is a disease of very general prevalence and is not confined to any particular climate or locality. It occurs most frequently in winter and spring. Males are more frequently affected than are females; and the right lung more frequently than the left. It was at one time believed that young children were almost exempt, latter day observations prove the reverse.

While the formerly entertained opinion, that cold, sudden changes in temperature and exposure are the efficient exciting causes of this disease is still adhered to by many, and probably to some extent conceded by all, still the dominant opinion of the day is that the disease has for its exciting cause a micro-organism of peculiar morphological characteristics, called by Fraenkel, *Diplococcus Pneumoniæ*.

Probably there can be no question but that this organism is always found in great numbers in the morbid tissues of the disease under consideration, and that the pure cultures produced somewhat similar conditions in experiments upon animals. The same micro-organism, is found in the normal secretions of the salivary glands and buccal cavity. It remains to be more fully demonstrated whether it is a mere concomitant of the disease, stimulated into pathological activity and perverted characteristics by the peculiar disease influence, or whether it is really an etiological factor in the disease.

The *Micrococcus Pasteuri*, differing in many essentials from the former, has been largely experimented with of late years by Dr. Sternberg, and is believed by him and many others to be the real pneumonic germ. The frequent occurrence of the disease in an epidermic form has been seized upon as evidence of its microbic origin. This to my mind, is far from conclusive. The predisposing influences are most usually endemic in character, rendering all persons living in a certain locality more or less receptive and liable to fall victims in an outbreak in which the exciting cause might be catarrhal, atmospheric or telluric, and giving to the outbreak as pronounced epidemic characteristics as though it was of microbic origin. The limits of my paper will not permit me to discuss further the microbic origin of the disease. The omni-presence of the organisms in the diseased tissues, and their power to reproduce the disease, if true, seem conclusive of their causative nature.

The anatomical changes of this disease are to be studied from three separate and distinct standpoints or stages, which are usually denominated, the first, second and third stages; or to speak more in pathological terms, the stage of hyperæmia or engorgement, the stage of solidification or hepatization, and the stage of resolution; each embracing pathological phenomena peculiar to itself, and giving rise to signs and symptoms of individual and peculiar significance, calling for study in detail.

The first stage marks the gradual progress from the normal to the abnormal; from the physiological to the pathological. It is one of hyperæmia extending over a large but usually well-defined area of lung, brought about by some disease-producing agent and exerted, evidently, through nervous influence. This local manifestation is evidently the expression of a systemic cause. The initial chill in adults, convulsions in children, succeeded in both by pyrexia in advance of all appreciable local disturbance, marks the disease as a true lung fever, no matter what may be the primary agent which exerts its depressing influence upon the nerve centers.

During the first stage, the blood vessels distributed around the lung alveoli, after a period of simple hyperæmia, become engorged and congested to the stage of blood stasis. In the early changes peculiar to this stage, the mucous membrane of the alveoli and contiguous bronchical terminals becomes dry, thickened and inelastic, giving rise to the hoarse, irritable, dry cough of this period. Later on, as the engorgement progresses, there occurs a slight serous effusion with the commencement of plastic formation, which proceeds to constitute the subsequent leading characteristic feature of this disease. This plastic material being distributed over the alveolar walls, renders them tenacious and causes their opposing sides to adhere when brought together by the mechanical pressure of the surrounding engorged tissue in the act of expiration, to be torn apart again by the filling of the alveoli in each inspiratory movement, giving rise to the auscultatory physical sign of the first stage, *crepitant râles.*

Extreme engorgement at this stage produces two other characteristic phenomena; the extravisation of red corpuscles by diapedesis through the capillary walls into the air vesicles, which, mixing with scant secretions in small bronchiæ, gives the characteristic symptom, *rusty sputum;* while the more solid character imparted to the normally porous and spongy lung tissue by the great vascular engorgement, renders it a better conductor or sound, transmitting the to and fro movement of the air through the bronchiæ, and producing, probably the first significant physical sign, *bronchial respiration.*

All of these conditions belong to the first stage, and progressively tend in one direction, resulting, unless resolved by nature or arrested by treatment, in more or less perfect and impermiable solidification of that portion of lung involved in the area of disease influence or patholog-

ical storm center; thus giving rise to dullness or flatness on percussion, with negative auscultatory signs.

This condition of solidification results from the progressive exudation of fibroplastic elements into the lung alveoli and inter-vesicular bronchiæ, until they become completely filled or clogged up by the coagulation of this material, constituting *red hepatization*, or the second stage of the disease, which is usually reached from the third to the fourth day after the initial chill.

About the completion of the condition of red hepatization, or often preceding it, occurs another vascular condition, the appreciation of which is important in the treatment at this stage. I allude to an intercurrent complication known as collateral œdema, which grows out of extreme engorgement and interference with the circulation in and around the disease focus, and consists in a serous effusion into the connective tissue in the immediate neighborhood of the disease, effectually and suddenly cutttng off from respiratory function a much larger lung area than is involved in the actual disease and producing sudden death from apnœa.

This complication of pneumonia occurs in the better class of subjects, those possessing good plasticity of blood and strong dynamic force. These cases when detected require a line of treatment peculiar to themselves. The condition of red hepatization is termed the second stage of croupous pneumonia. I am inclined to look upon it, however, as the climax or perfection of the first stage, but shall not contend for so radical a change in the usually accepted classification of stages.

The condition of red hepatization is usually one of short duration; the processes of resolution often commencing while portions of lung in the immediate neighborhood are yet in the stage of engorgement, presenting to the diagnostician signs conflicting and significant of different conditions apparently from the same locality; this same perplexing complication occurs again when the disease spreads or invades peripherally as it sometimes does.

As a very general rule, the disease does not remain longer than a few hours at the point of red hepatization before the retrograde changes characteristic of *resolution* set in. There is one condition in which I have seen the state of red hepatization remain for days without any appreciable effort at resolution. I allude to these cases of croupous pneumonia which supervene as an intercurrent complication of la grippe. In this condition I have seen the stage of resolution delayed for several days and the lung remain apparently unchanged. I offer no explanation.

Red hepatization or solidification, which I have designated as the climax or perfection of the first stage, is simply the filling up the alveoli and terminal bronchiæ in the diseased region, with a plastic material elaborated from the blood serum and leucocytes which have found their way into these cavities in consequence of the overdistended condition of the blood vessels surrounding them, and acting under a specific pathological stimuli. The plastic material thus contained in the lung parenchyma is firm, solid and adherent to the alveolar walls and, when cut, the hepatized tissue presents a red, rough and granular surface.

The process of resolution consists in retrograde and reparative changes, amongst the first notable of which is the bleaching out or disorganization of the red corpuscles, and the increased migration of leucocytes into the alveoli, changing the scarlet red appearance of the inter-vesicular matter and giving to the diseased tissue a grayish appearance, termed *gray hepatization*. The further progress of resolution consists in fatty and granular changes, and in breaking down by processes of liquefaction or solution of the matter in the alveoli and bronchial terminals, not well understood.

Portions of this plastic matter are partially dissolved, and expectorated in the form of granular masses and minute tube-casts, others are wholly liquefied, and expectorated, at first mixing with the excessive migrating leucocytes—constituting muco-purulent, later on mucoserous-discharges.

Early in the stage of resolution, as the air commences to re-enter the re-opening air vesicles, and in passing through the small bronchiae filled with tenacious matter, a minute bubbling sound is created both on inspiration and expiration, called sub-crepitant râle, which marks the commencement of resolution. Later on, when the larger bronchiae become filled with the same material, the same process produces large mucous râles.

These signs, with the re-appearance of resonance over the diseased region indicate the progress of resolution. The expulsion of all products of inflammation by expectoration, a re-establishment or normal circulation in the blood vessels embraced in the area of actual disease and its surroundings, with the repair of bronchial and alveolar epithelium, constitutes the cure, and embraces the periods of resolution and convalescence.

In approaching the treatment of acute croupous pneumonia, it may not be amiss to lay down a few general propositions.

The disease is specific in character and self limited in nature. When not prolonged by intercurrent complications, intensified by overpowering predisposing agencies, or exaggerated by excessive suppurative processes or ulceration in the lung tissues, the tendency in to run a course of from seven to ten days, from the initial chill to the establishment of convalescence.

It is altogether a disease of a low rate of mortality, in which nature is capable of accomplishing a cure in a large proportion of cases, no matter what ordinary treatment may be pursued or whether treatment is instituted or not.

This accounts for the general success which we hear reported from the most diverse and conflicting methods. From the homeopathic to the more potent colored water; from the spoliation of blood letting, mercurial ptyalism and tarter emetic to the conservative and supporting treatment of dietectics, quinia ammonias and strychnia, all report marvelous successes and low mortality.

While it is a disease with a generally favorable prognosis, yet it offers a rare field for intelligent medication. All do not recover, even under the best treatment; and especially when intensified by complications and vitiating influences, does it offer a scope for study and investigation unsurpassed in pathological study. There are a limited number which may be saved or lost, by proper or improper treatment. Indeed there probably is no disease calling for more nice and accurate knowledge of pathology and therapy than this, and none in which the intelligent physician can get a surer return for his knowledge and skill.

When complicated, it always terminates in a crisis; usually a critical sweat marks the advent of defervescence and permanent favorable change.

In the treatment of this disease, it is well to bear in mind that there are two great pathological processes to be kept in view:

First, the filling up of the air vesicles by the coagulation in them of a fibroplastic material resulting from a pathological condition brought about by a systemic poison operating through nerve influences upon an area predisposed to disease by other agencies. In other words, that the disease as we recognize it, is but the local expression of a systemic cause, and that the rate of mortality or the risk of life may practically be calculated by the extent of this process in the first stage, or that the danger to life in croupous pneumonia bears a direct ratio to the extent of *red hepatization*.

The other process is that of *resolution*, which sets in usually upon the completion of hepatization and is entirely one of repair, or nature's effort to remove pathological products, in which she is aided or retarded by the dynamic forces and vital resistance of the patient, or the absence of these.

It follows as a logical sequence, that the indications for treatment in the first stage are to counteract and prevent as far as possible, the tendencies to this process of solidification, and to antagonize any vice or toxic principle which may be depressing to vital resistance.

The indications in the second condition are to assist nature in her effort to rid the lung tissues of their pathological products, which is accomplished by liquefaction and expectoration; and to support the system under the irritation and spoliation consequent upon these efforts.

In carrying out the indications in the first stage, it will be well to bear in mind that the fibrinous coagulum contained in the air cells is the product of fibrinous elements in the blood, effused into the air-cells from the over-distended inter-vesicular capillaries coming in contact with ferments contained in or furnished by the leucocytes which have migrated into the field of disease.

Then it follows that the lowering of blood pressure and arrest of arterial tension and consequent engorgement of lung capillaries, will tend to prevent the effusion of fibrin principles, as well as the mi-

gration of leucocytes, and to that extent will retard or prevent the accomplishment of this stage. Again fibrin elements in the blood vary greatly under different conditions. They are always the product of retrograde changes in disease and of destructive metabolism in health, and are always exaggerated in inflammatory diseases, especially the one under consideration, hence such treatment as will lessen or prevent the elaboration of those principles in the blood, or neutralize them after formation, at the same time lessening the labor of the lungs becomes a disideratum in the treatment of the early stage.

Hence that class of remedies known as defibrinators and depressants of blood tension, have naturally been looked upon as valuable agents—if such were the trio, blood-letting, mercurials and tartar emetic, so popular with the profession a quarter of a century ago, and yet regarded with great favor by many. These remedies would constitute the ideal treatment in all cases of this disease, if it were not for their spoliation and permanent prostrating effects. Hence, except in well-selected cases, they are contra-indicated on account of the strong tendency to adynamia or asthenia (often erroneously termed typhoid) which demands in the latter stage all of the vital powers and reserve forces of the patient to meet the pathological ordeal. These remedies, however, are not only applicable but constitute the only reliable treatment in a limited number of cases. These are the dynamic or sthenic cases of pneumonia, occurring in persons with good integrity of blood and muscular contractility—in such as collateral edema is to be dreaded.

For a long time the lowering of blood pressure and liquefaction of fibrin products in the blood, have been sought to be accomplished by a line of treatment less depressing to the vital energies. The first is accomplished by the use of heart sedatives, such as veratrim viride and aconite; and the latter, by the employment of muriate of ammonia. This, I believe, is yet the most popular treatment of the day, in the early acute stage.

The objection to these powerful heart sedatives is that their effects are more or less permanent, leaving a heart inertia which proves detrimental to recuperative action in the more advanced stage.

Again, I fear that their paralyzing effect upon vaso-motor influence favors sluggish circulation and blood stasis in the lungs, at the same time that it lessens the *vis a tergo*, and thus often more than neutralizes the good effects they would otherwise accomplish.

I have been accustomed to endeavor to overcome this evil effect in these useful remedies by combining them with stimulating doses of quinine, which drug I regard as invaluable in all stages of this disease, being an arrester of molecular changes. It lessens the accumulation of fibrin elements in the blood and also, as established by the well-known experiments of Singer, it not only lessens the number of leucocytes but also arrests their amœboid migration from the blood vessels; thus striking at the very foundation of the processes which result in fibrinous coagulation and cell proliferation, which, as before stated, constitute the danger features of this disease. Besides, by its stimulation the brain, vaso-motor, respiratory and cardiac centers when given in small doses, it overcomes in a great measure the objections to verat. viride and aconite.

These remedies can be given in combination in capsules if desired, or can be given separately for the effect.

There can be no possible objection to the use of muriate of ammonia in the early stage. It may be given in from five to ten grain doses, every three hours, in solution, or, preferably, with sprup of wild cherry or tolu added; also an appropriate quantity of syrup or wine of ipecac.

Squills and other stimulating expectorants are to be discarded at this stage, to be taken up later on.

Tincture or infusion of digitalis is a remedy to which many practitioners are exceedingly partial, in the first as well as in the subsequent stages. Just how we can reconcile the employment of an agent which is universally conceded to be a heart stimulant and an intensifier of blood-pressure, in the treatment of a condition where we have acknowledged that the lowering of blood-pressure is indicated, appears parodoxical, and yet I believe that it is a valuable remedy. No doubt, there are others present who employ it as I do, from whom I hope to hear the rationale explained more fully.

Calomel given in several small doses, early in the disease following by a gentle purgative, I regard as essential for reasons which

must be obvious to all, but I would not press its use to the point of ptyalism, as was formerly the custom. When the temperature runs very high, despite the use of heart sedatives, there can be no objection, in my judgment, to the employment of one of the coal tar antipyretics to reduce it within reasonable bounds, but their employment further than this should not be persisted in.

When pain is a prominent and distressing symptom, which is usually the result of pleural complication, opiates may be employed with extreme caution.

Sinapisms, dry cups and warm fomentations to the affected side, each have a limited field of usefulness.

Blisters should not be employed in the early stage. Here I am convinced a great diversity exists in the practice of different physicians first, as to whether blisters should be used at all in pneumonia; next, as to the stage at which they should be employed. I have changed my opinion several times upon this subject and may change again, but at the present writing, with the lights before me, I would not employ them in the acute stage.

In treating this disease during the stage of resolution, different indications are to be met. Such agents as will aid in liquefying the products of inflammation, encourage expectoration, stimulate respiratory function and sustain and support the vital forces, are to be employed. Many of those used in the first stage are to be dispensed with, while others are to be retained with additions thereto. If blood-letting, tartrate of antimony, veratrim viride and aconite have been employed, they are to be discontinued. Calomel should be employed only occasionally after the first stage, for the purpose of maintaining the liver in functional activity and to protect the kidneys against vicarious labor.

Local treatment is no longer required except in the advanced stage of resolution, when, as is sometimes the case, the flagging vital powers seem to come to a halt. I have used large blisters over the diseased region with prompt and decided benefit. In some way not understood by us, blisters in this condition seem to arouse a renewed effort in the exhausted forces of nature.

The muriate of ammonia is to be exchanged for the carbonate, which is a needed, diffusible stimulant and respiratory tonic, as well as a solvent of the offending plastic material.

Quinine is to be kept up in the same dosage recommended in the early stage, for its tonic and stimulating effects.

Stimulating expectorants are to be employed now. Squills, senega, sanguinaria and ipecac may be selected. If all were used in combination, probably the prescription could not be improved.

As the stage of resolution progresses and expectoration becomes profuse, strychnia, with one of the mineral acids, may be advantageously added to the treatment.

Here digitalis may again be brought into requisition, to meet threatened heart inertia, but I believe that its greatest usefulness is in the early stage.

In cases of sluggish progress or delayed resolution without any evident cause, iodide of potassium may be added to the expectorant compound, in five-grain doses, three or four times a day.

A well-regulated dietary is as essential in this stage as medicine. Milk, meat-juices, broths, eggs, etc., should be allowed to the digestive capacity of the patient. When appetite and digestion are defective, they should be stimulated and aided by the use of bitter tonics, pepsin and dilute muriatic and phosphoric acids.

During the entire disease, the emunctories should be maintained in functional activity, the bowels gently open, the kidneys fortified against excessive work in eliminating waste matter, by the employment of some of the alkaline mineral waters.

The skin has an important work to perform, not only as an eliminator, but as a dispenser of hyperpyrexia through the evaporation of its secretion. Hence sponging with tepid and cleansing lotions should be kept up at seasonable intervals.

General glandular inertia, especially intestinal, with dryness of mouth, during resolution may be greatly relieved by the stimulating effects of turpentine, in five drop doses, three or four times a day.

Last, but not least, careful hygienic observance should not be neglected.

The open admission of pure air is a desideratum, but in such manner as to protect against currents and draughts.

CONTRIBUTION TO THE STATISTICS OF TYPHUS (TYPHOID) FEVER.*

DR. BERG.

1626 cases are considered, which were treated in the Leipsic Medical Clinic, from the beginning of 1880 to August 1, 1893. Comparisons are made with similar statistics compiled by H. Schultz during the great Hamburg epidemic of 1886–7. Since the end of 1888, all the cases have been systematically treated with lukewarm baths, varying to cool showering (*Uebergiessung*) in case of extensive lung involvement or marked disturbance of the sensorium, providing the recognized contra-indications did not forbid the use of baths. In most cases, not more than one or two baths daily were ordered.

Although there were marked variations from year to year, and from month to month, the following table shows the well-known preponderance of cases in the early autumn. [Probably a similar table compiled for the northern cities of the United States would show the maximum point to be delayed about a month. A. L. B.]

TOTALS, 1880–92.

Jan.	122	July	136
Feb.	96	Aug.	252
March	97	Sept.	240
April	78	Oct.	193
May	71	Nov.	150
June	75	Dec.	88
	Grand total		1598

All statistics agree that the great majority of cases of typhus occur in autumn and a comparatively small number in spring. [It will be noticed from the appended table that the years 1882, 1888 and 1893 form minima in an irregular curve. It would be interesting to note if a periodicity in the occurrence of epidemics could be demonstrated by a study of statistics for a long term of years. A. L. B.]

1880—113	1887—103
1881—178	1888— 82
1882— 88	1889—194
1883—194	1890—137
1884—138	1891—117
1885—120	1892— 97
1886—110	1893— 46

(estimated from the number reported up to August 1st, taking the average ratio for the entire series).

In only a limited number of cases was the etiology apparent. One hundred and forty-seven patients came from houses in which typhus had occurred; twenty-three female nurses contracted the disease at the hospital, and seven patients, entering the hospital for some other trouble developed typhus. But, of the seven, a local cause could be positively excluded in the case of four who developed typhus five to eight days after admission, and probably, in the case of the remaining three who developed typhus ten or twelve days after admission. (Can we be so positive as to the time necessary for incubation?) Various authorities give the following statistics of "typhus domesticus." [Apparently this term means typhoid fever developing in the hospital; in this sense, the percentage of Berg's total list of cases is 1.5; if we take the term to apply to all cases showing an apparent contagion or infection due to residence, Berg's percentage would be over ten. A. L. B.]

Liebermeister, for Basal,	2.4 per cent.
Alexander, for Breslau, .	3.6 " "
Goth, for Kiehl, . . .	5.5 " "
H. Schultz, for Hamburg,	.57 " "
Murchison, for London Fever Hospital, . .	.3 " "

A repetition of the disease was positively demonstrated in only one of our cases, that of a man who had typhus eleven years previously. Another case in which the patient was seized with typhus two months after the end of the first attack, is probably to be considered as a re-

*Condensed translation from the German Archives for Clinical Medicine, April 11, 1895, by A. L. Benedict, A.M., M.D., Lecturer on Digestive Diseases, Dental Department, University of Buffalo.

lapse. The frequency of repeated attacks is given as follows:

H. Schultz, ...	2.2	per cent.
Beetz, ...	1.8	" "
Freundlich, ...	2.2	" "
Goth, ...	2.	" "
Ours only, ...	.05	" "

According to age, the 1626 cases of typhus were divided as follows:

1	year—	3 cases.	.19	per cent.
2	" —	2 "	.13	" "
3	" —	7 "	.44	" "
4	" —	10 "	.63	" "
5–9	" —	46 "	2.80	" "
10–14	" —	86 "	5.4	" "
15–19	" —	359 "	22.4	" "
20–24	" —	434 "	27.	" "
25–29	" —	315 "	19.5	" "
30–34	" —	167 "	10 4	" "
35–39	" —	106 "	6.61	" "
40–44	" —	41 "	2.5	" "
45–49	" —	29 "	1.8	" "
50–59	" —	20 "	1.25	" "
60–69	" —	10 "	.63	" "
70–80	" —	5 "	.32	" "

Between the ages of 15 and 29 1108 cases occurred, almost two-thirds of the total number, and between the ages of 15 and 35 as much as 86 per cent. H. Schultz has found in a series of 3686 cases, that 56.8 per cent. occurred between the 15th and 25th years, and that 80.04 per cent. were included between the 15th and 35th years. According to Liebermeister, 19 per cent. of all typhus cases occur between 16 and 20; 58 per cent. between 21 and 30; 16 per cent between 31 and 40; thus 93 per cent. occur between 16 and 40. Freundlich tabulates 87.7 per cent. between 15 and 35. Other authorities also arrive at similar results.

According to our statistics, sex has an influence as well as age; in every period of life the male patients predominating. We have in all 917 men—62.2 per cent., and 709 women—37.8 per cent. Other authorities, for example—Murchison and Griesinger—maintain that both sexes are equally liable to typhus, and explain the majority of men by the circumstance that women are more unwilling to go to a hospital. The influence of sex does not extend to children, for we count 80 boys and 82 girls under 15, and H. Schultz finds 250 boys and 201 girls. However, there are not lacking authorities who claim that typhus occurs twice as frequently among boys.

Of our 1626 cases 243, 12.7 per cent., died. The proportion of fatal cases in the different years is shown in the following table:

Year.	Patients.	Died.	Males.	Females.
1880	113	22	13	9
1881	178	21	15	6
1882	88	6	3	3
1883	121	22	11	11
1884	138	10	7	3
1885	120	22	14	8
1886	110	10	7	3
1887	103	17	10	7
1888	82	9	8	1
1889	194	22	13	9
1890	173	31	14	17
1891	117	27	9	18
1892	96	16	7	9
1893	28	8	4	4 (8.mos)
'80–'93	1626	243	135	108

The mortality varies greatly with different years. In 1888 18 per cent. died: in 1884, on the contrary, only 7 per cent.

The mortality, according to age, is as follows, Schultz's statistics for the Hamburg epidemic are added in the last column:

Years.	Patients.	Deaths.	Per Cent.		Per Cent.
1–4	22	3	13.6	—At Hamburg	4.
5–9	46	8	13.		6.4
10–14	86	7	8.1		8.1
15–19	359	35	9.7		8.7
20–24	434	60	13.8		7.7
25–29	315	37	12.		
30–34	167	25	15.		12.3
35–39	106	30	28.3		11.5
40–44	41	12	29.2		14.6
45–49	29	9	31.		18.5
50–60	20	8	40.		26.9
60–70	10	4	40.		
70–80	5	3	60.		

The table shows that, excepting children under 10, there is a constant increase of mortality with advancing years. On the whole the mortality of the Hamburg epidemic is less than in our series.

[The translator would suggest that American physicians are prone to report cases according to the known prevalence of a certain disease. For example many

colds and mild attacks of bronchitis have been termed "grippe" in the last few years, and probably in an epidemic of typhoid many simple cases of diarrhœa, febricula, malaria, etc., are reported to health boards as genuine typhoid, so that the aggregate mortality would tend to appear low. It is to be observed that the word "typhus," occurring throughout this article undoubtedly means *typhoid*, the qualifying adjective, *abdominalis*, being omitted.]

It is often stated that in children the mortality of typhus is low. This is not supported by our statistics. Goth also reckons the mortality of children with typhus as higher than between the ages of 10 and 25, and as high as between the ages of 30 to 35.

Liebermeister states the mortality of male patients at 12 per cent.; of women at 14.8 per cent. Murchison gives 17.68 per cent. and 18.89 per cent. respectively; H. Schultz 8.8 per cent and 9.4 per cent. On the other hand, Goth gives a higher male mortality for Kiel, and Beetz for Munich.

It was found that the prognosis became worse the later in the fever the patient entered the hospital. The duration of the fever, excluding relapses was as follows:

Up to 4	weeks,	73	per cent.
" " 5	"	16	"
" " 6	"	8	"
" " 7 or more,		3	"

The duration with children was no less than with adults. Of 154 patients under fifteen, 75 per cent. "fevered till four weeks," and 25 per cent. longer.

The time of convalescence was 20 days in 50 per cent. of all cases; 40 days in 39 per cent.; 60 days in 5.8 per cent., the last group including, almost without exception, those with sequelæ.

Including under the term recrudescence (Nachshub), a renewed rise of temperature, swelling of the spleen and rash in the period of regression, this phenomenon has been noted 63 times—3.3 per cent. H. Schultz notes it in only 1.8 per cent. of his cases. In four patients, a repetition of the recrudescence occurred; in one of them there were three in succession.

Genuine relapses occurred more frequently, 210 times, or in 12 per cent. of the cases. Authorities differ widely as to the frequency of relapses. The statistics vary from 3 per cent. to 17 per cent. in different epidemics. In the present series, there is a great difference in the annual statistics as to relapses. Relapses occurred in 108 male patients—11.8 per cent. and in 102 females—14.5 per cent. Relapses occurred relatively more often in children than in grown persons. Of 1462 adults, 179 or 12.5 per cent. had relapses; of 164 children, 31, or 19.1 per cent. Other statistics support the same conclusion. Schultz and von Ziemessen also note a more marked predisposition on the part of women. The influence of the previous typhus on the relapse is noticeable, in that the latter follows by preference a light attack of fever. Of our 210 relapses, 75 per cent. followed light or moderately severe cases. A similar percentage is given by von Ziemssen, Liebermeister, Steinthal and Goth, while H. Schultz states that relapse occurred after 236 severe cases, and after 260 cases of moderately severe or mild fever.

The beginning of the relapse varied between one and 77 days after defervescence. 24 relapses began after 1 or 2 days; 32 after 3 or 4; 20 after 5 or 6; 32 after 7 or 8; 25 after 9 or 10; 29 after 11 or 12; 12 ofter 13 or 14; 8 after 15 or 16; 5 after 17 or 18; 4 after 19 or 20; 8 after from 20 to 30 days; 3 after from 30 to 40; 1 after 77 days. Most of our relapses lasted from 6 to 20 days. 20 had a duration of five days or less; 92 of from five to ten days; 90 of from ten to twenty days; 18 of over twenty days; the longest lasted 72 days. The results of the relapse was in most instances favorable: 7 times, (not quite 3 per cent.) death occurred. According to H. Schultz, 4.1 per cent. die of the relapse.

The rash was positively present in 80.4 per cent. of all cases; doubtful in 5.6 per cent; never present in 14 per cent. The spleen was enlarged so as to be palpable in 69.4 per cent.

There was a great variation in the stools, as noted:

	Cases	Per Cent.
Continued diarrhœa occurred in	480	25.6
The movements were normal throughout in	83	4.4
Constipation persisted in	307	16.4
Diarrhœa and normal passages alternated in	144	7.7
Diarrhœa and constipation		

	alternated in	550 29.3
Diarrhœa,	constipation and normal passages in	62 3.3

There was a predominance of diarrhœa and constipation with two or three days without a passage and then three or four days of thin stools.

In 103 cases, 5.5 per cent. of intestinal hemorrhage were noted. Former statistics regarding hemorrhage vary between 2.5 per cent (Bülau at Hamburg) and 16.6 per cent. (Murchison at London). Griesinger gives 5.3 per cent. for Zürich, and Goth 5.9 per cent for Kiel. The first bloody stools appeared:

Between the	1st	and	5th	day	in	23	cases,
"	6th	"	10th	"	"	37	"
"	11th	"	15th	"	"	35	"
"	16th	"	20th	"	"	15	"
"	21st	"	25th	"	"	9	"
"	26th	"	30th	"	"	8	"
"	31st	"	40th	"	"	4	"
On the	55th		day	in		1	case.

In other words, three fourths of the hemorrhages began in the second week. H. Schultz states that 44.8 per cent. of his series began in the second week.

According to age. the intestinal hemorrhages are grouped as follows:

								per cent.
Up to the	15th	year,						3.8
From the	16th	to the	19th	year,				3.5
" "	20th	" "	24th	"				4.2
" "	25th	" "	29th	"				4.5
" "	30th	" "	34th	"				9.4
" "	35th	" "	39th	"				9.
" "	40th	" "	49th	"				12.5
" "	50th	" "	59th	"				12.
" "	60th	upward,						14.3

That is to say, the liability to hemorrhage increases with advancing years, except that children have the same liability as adolescents. Schultz gives 1.05 per cent. as the frequency of intestinal hemorrhages in children during the Hamburg epidemic, but Henoch puts it at 2.9 per cent. Sex appears to have no influence.

The number of bloody stools was as follows:

One in 35 patients; 2 in 24; 3 in 18; 4 to 6 in 16; 7 to 10 in 3; more than ten in 5. The highest number was 17. The mortality of typhus patients with intestinal hemorrhage amounted to 38.2 per cent., against 20.9 per cent. in Hamburg, according to Schultz. 1.8 per cent. of all patients had bloody stools before their death. Note that it is not stated that these patients owed their death to the intestinal hemorrhage; indeed, there are included in this number several who suffered an intestinal perforation, or some other serious complication.

15–2 per cent. of the women with typhus were pregnant. All were in the twenties, except one who was forty-one. No birth at term was observed. Of the 15, only one in the seventh month of pregnancy, was discharged pregnant; abortion occurred in eleven cases and premature delivery in three. Abortion occurred once in the second month of pregnancy; once in the third; twice in the fourth; three times in the fifth; four times in the sixth. The premature deliveries occurred one in the seventh month and two in the eighth; all three fœtus lived. Abortion occurred twice between the fifth and tenth days of the disease; once between the tenth and fifteenth; three times between the fifteenth and twentieth; once between the twentieth and twenty-fifth; once each at the twenty-eighth and thirtieth days. In two cases exact information is wanting

A twenty-two year old woman was admitted on the third day after delivery, and one thirty-two years old, on the eighth day. The latter succumbed and, and on autopsy, there was found, besides the characteristic typhous lesions, diphtheritic endometritis.

Of the pregnant patients, five died, three after abortion and two after premature delivery. Section showed diphtheritis of the womb. Our mortality in this class of patients amounts to 33.3 per cent., against 7.8 per cent. according to Schultz, at Hamburg. So far as we can depend on these statistics, gathered from the observation of a small number of patients, we can conclude, (1), that pregnancy is almost always interrupted by typhus; (2), that the course of the fever is more unfavorable than with other women, and (3), that the life of the fœtus is not endangered through the sickness of the mother.

Meningitis symptoms, stiff neck, violent pain in the head, etc., were noted in ten cases, all of young women. Psychoses were noted twenty times, in 1 per cent., they consisted mainly of melancholic conditions and usually appeared during the fever, rarely during the convalescence. Two

cases were noted during relapses. Several times, marked cataleptic symptoms were observed. Individual neuralgias were noticed, but not neuritis.

Pneumonia occurred 167 times, in 8.9 per cent. of all cases. The right lung was more frequently affected than the left; most of the cases were hypostatic, a single one of fibrinous nature. Death occurred in 14 per cent. of the pneumonia cases. Bronchitis was found in two-thirds of all patients. It was usually slight and of brief duration; in 3 per cent., it was severe. Pleuritis was observed 13 times; 6 as dry, 5 times as serous, and twice as suppurative forms. Eight cases were complicated with phthisis.

Intestinal perforation occurred 42 times, 2.2 per cent., including 25 cases in men and 17 in women. Age seemed to have no influence on the occurrence of perforation. Ten cases occurred between the tenth and twentieth days; thirteen between the twenty first and thirtieth; six between the thirty-first and fortieth; one each on the forty-sixth, fifty-sixth and sixty-fifth and sixty-eighth days. In twelve cases exact information is wanting, H. Schultz gives the percentage of perforative peritonitis as 1.6, .6 less than in this series.

Albuminuria is not especially frequent; namely, in 212 cases, or in 11.3 per cent. H. Schultz puts it at 12.6 per cent. for 1886, 9.4 per cent. for 1887. A number of cases entered the hospital with albumin in the urine, so that no accurate statement can be made as to the duration of the albuminuria. In 75 per cent. of the cases, albumin was first found in the third week. In 25 per cent. albuminuria first appeared in the fourth, fifth and sixth weeks. This observation coincides with statements elsewhere made, that there is no fixed time for the beginning of the albuminuria, but that it most frequently begins inside the first week of the sickness. [The obvious contradiction must be due to a misprint; probably it is meant that 75 per cent. of the cases appear in the first week. A. L. B.] In a number of cases, the albuminuria persisted only a short time or, occasionally, only traces of albumin were detectable. Excluding these cases, there were 175, 7.7 per cent., of longer duration, of which half lasted till the tenth day, the remainder till the second, third or fourth week.

Nephritis occurred 53 times, 2.8 per cent., a relatively high proportion; Schultz at Hamburg gives only .9 per cent. Age had no influence in determining nephritis, but four-fifths of all the cases were found in males. The mortality of typhus complicated with nephritis was extraordinarily high, 44.4 per cent. Schultz gives exactly 50 per cent. for Hamburg. All the cases of nephritis were of the acute hemorrhagic type. Cystitis was observed 15 times, .8 per cent. It occurred at no definite time and lasted, on the average, a week, the prognosis being good. [No statement is made as to the possible infection by catheters. A. L. B.]

A long list of other complications is appended, but they appear to be purely accidental. It is significant that hepatic abscess, which is sometimes stated to be a *sequelæ* of typhoid, was observed only once. Dysentery [typhoid infection of the colon?] was seen three times, perityphlitis four times. Nose bleed, which is usually mentioned in the symptomatology of typhoid, was noted in only 3.1 per cent. of the cases, but this may have been due to delay in reaching the hospital.

The occurrence of death according to the week of the disease, was as follows:

1st	week	6	deaths
2nd	"	37	"
3rd	"	63	"
4th	"	51	"
5th	"	22	"
6th	"	20	"
7th	"	9	"
8th	"	7	"
9th	"	5	"
10th	"	2	"
11th	"	4	"

One patient died on the ninety-seventh day after admission, after an illness at home of unknown duration. In 17 cases, the time of death was not definitely mentioned. 7 patients died in relapses. The majority of fatal issues occurred in the third and fourth weeks of the disease. H. Schultz states that 59.1 per cent. of his series died in the first two weeks of their stay in the hospital, which is in substantial agreement with the present report.

Death was due either to the severity of the infection or to complications. The former cause is responsible for 89 deaths,

37 per cent., most of which are ascribed to heart failure.

Of the complications causing death:

	Cases	Per cent.
Intestinal perforation led to death in . . .	40	16.5
Intestinal hemorrhage led to death in . . .	19	8
Croupous pneumonia led to death in . . .	24	10
Parenchymatous nephritis led to death in .	11	3.7
Pyæmia and septicæmia led to death in . .	8	3.2
Acute hemorrhagic diathesis led to death in	5	2
Acute miliary tuberculosis led to death in .	3	1.2
Abortion and premature delivery led to death in	4	1.6
Embolism of pulmonary artery led to death in	2	

Perforated pyosalpinx, fatty degeneration of the heart, general peritonitis due to perforation of the vermiform appendix by a fæcal concretion, each caused one death.

A CASE OF GLYCOSURIA.

J. M. SHAFFER, A.M., M.D., KEOKUK, IOWA.

The patient was not seen by me, and all statements are *ex parte*. The attending physician requested that the analysis be made. He says:

"There are no objective or subjective signs of diabetes; but a medical man at her recent home (Tacoma, Washington), had found sugar in the urine. No analysis presented.

"Patient is a widow; mother of five children, all living and in good health, ages from forty-nine to thirty-two years. Antecedent family history excellent. She is sixty-seven years old; weighs 175 lbs.; perhaps there has been a decrease of weight in 10 years of 25 lbs. There is no special loss of strength; good appetite; sleeps well, an afternoon nap included; bowels regular; is well so far as she knows, except an eczema with pruritis about vulvæ. About one year ago, she had an attack of sciatica which confined her to bed three months."

Just prior to the analysis she had made a journey, unattended, from the Pacific coast to the Mississippi River to visit members of her family here.

Urinalysis made April 29th shows:

Quantity voided in 24 hours preceding, 57 fluid ounces (3¾ pints, 1 f3). Color, light yellow 2 (after Vogel).
Reaction—Superacid.
Specific Gravity, 1st test—1.039.
Specific Gravity, after 8 hours—1.036.
Albumen—No trace. Tauvet's test.
Albumen—No trace. Heat.
Sugar—Loaded. Fehling's imp. copper.
Sugar—Loaded. Hylander's bismuth.
After 10 hours, specific gravity, 1.036.
After fermentation with yeast, 1.008.
Grains of sugar to f3. 28.
Sugar in 57 f3. 3⅛ oz.
Solids in urine, all, 86 in 1,000.

A sample of the urine voided April 24th and left exposed to ordinary temperature has, after six days, no odor, and application of Fehling's improved copper test shows it *loaded with sugar*.

The only point made in this case is that glycosuria may exist, even to a very great extent, without presenting any of the urgent symptoms laid down as especially belonging to the disease. Moreover, that diabetes may exist and the patient or the doctor not know it. It is not needed that citation be made from THE MEDICAL AND SURGICAL REPORTER to indicate this.

In my long experience as examining surgeon of the Pension Office, two cases, where a claim for "kidney complaint" was made as the basis of a pension, are noticeable. One was a soldier from a neighboring State, had visited Colorado for his health; he never suspected diabetes; but his urine was much like above in analysis. This was subsequently verified—that is, the presence continuously of large quantities of sugar in the urine. Case lost sight of, but he may be pensioned for lumbago, or heart hypertrophy.

The other was a soldier also—his claim, deafness and rheumatism. His urine was loaded with sugar. He did not know it then; he does not know it now. He is a stout, active, splendid fellow now, and has

been. There has been no opportunity to verify or disprove the glycosuria of this case.

From these experiences it would seem that a very large amount of sugar may be present in the urine without any marked symptom or set of symptoms laid down as pathognoonmic of diabetes.

One of the old masters said, "*In omnibus morbis pectoris, ad urinam spectandum.*" Why not look to the urine in all sorts of obscure cases of illness?

COMMUNICATIONS.

ARTHRITISM AND SCIATICA.

DR. A. CLAUS.

Sciatica, also known as sciatic neuralgia and sciatic gout, is one of the most frequently observed forms of neuralgia.

It is therefore extremely interesting to discover whether the pathogenic theory which we have developed in the case of migraines and of the neuralgic manifestations of influenza, also finds here an application, or, in other words, whether the arthritic predisposition, setting aside any character of an infectious nature, is manifested in sciatica with that frequency which struck me in the study of the other neuralgias already mentioned.

One of my friends objected to me that arthritism was a conception of too vague an order, with too indistinct characteristics, to enable us to establish so precise a pathogenic relation. The usefulness of the efforts I was making to defend these ideas, which are scattered about in literature, was therefore to him not proven.

It will not be altogether useless, before attempting the study of the relations which exist more particularly between arthritism and sciatica, to consider the objections of my *confrere*.

Without entering into extended considerations upon general pathology I will say that among the physicians who nowadays make use of the word *diathesis*, some attach to it the significance of a morbid state, apparent or latent, while others whose tendency I share, simply designate under that name a general predisposition to contract a certain number of diseases which are supposed to have a common starting point.*

*Traite de Medicine Charcot, Bouchard, Brissaud, Vol. I.

With Bouchard I admit but two diatheses: arthritism and scrofula, a diathesis being considered as a permanent disturbance of nutritive changes. It prepares, causes and maintains maladies varying as to symptomatic forms, anatomical location and pathological processes.

The arthritic diseases are: biliary lithiasis, gravel, obesity, the acid dyscrasia, oxaluria, diabetes, gout, rheumatic articular and subarticular affections, differing among themselves by the seat of the process, the evolution and the lesions, yet having some sort of relationship; it is the same family of diseases. The bond that unites them is the same disturbance of nutrition, a diathesis "that might be called oligotrophic, in order to indicate that nutrition transforms less matter in a given time, or ocnotrophic to show the idleness of nutritive changes" (Legendre), and which Drs. Bouchard and Landouzy prefer to term bradytrophic. But custom has hitherto caused the adoption of the word arthritism, and the diseases of that family are called arthritic diseases, on account of the frequent existence among the individuals who present these diseases or in their parents of rheumatism and gout, united by the ancients under the name of arthritis.

The definition of arthritism being established, it remains to me, in order to answer my confrere's objection, to establish the frequency of the relations which are observed between neuropathic states and arthritism, and to demonstrate the usefulness of this pathogenic conception.

It is generally recognized, says Fréré*,

* La famille nevropathique.

from whom we borrow the considerations which follow, that the neuropathic family shows close relations to the arthritic diseases, to such an extent that they are sometimes united into a mixed group, termed *neurarthritic*. One frequently meets in neurotics and in their family, rheumatism, and still more frequently gout. Baillarger had already recognized this relation of rheumatism to the neurosis in general. Thus the combination of rheumatism and hysteria is frequent; at times it is the articular affection which is the starting point of hysterical manifestations, and the two maladies may proceed side by side without influencing one another. In the same manner the association of rheumatism and epilepsy in the same individual is a very common event.

I have already noted the close bonds which unite chorea and rheumatism (Bouteille, Sée). Rheumatism, however, is not to be considered as a primordial cause of chorea; it plays, owing to its pathological relation with the neurepathic diathesis, the part of a particularly active excitant of the predisposition.

Fréré has observed a young woman who, while convalescing from articular rheumatism, was taken with chorea; an interesting point in this case was that the rheumatism, in this case, took on an hemiplegic form, while the choreic movements remained limited to the same side.

Rheumatism awakens the nervous diathesis, which shows itself by convulsive or delirious manifestations (rheumatismal mania of Burrond, Griesinger, Mesnet), according to the special predisposition of the subject. The same thing may be said of medullary localization.

It is in great part by reason of the relation of rheumatism and the neuropathic predisposition that one may account for the frequency of psychical manifestations in diseases of the heart.

As for the different forms of chronic rheumatism, their bonds with the neuropathic family are much closer, and one may expect to find them associated with a large number of neurotic manifestations. Fréré has seen hysteria tardily manifested in an arthritic woman who suffered from retraction of the palmar aponeurosia, an affection whose close connection with rheumatism is recognized.

Paralysis agitans appears to be connected with the rheumatic affections. Fréré has seen its development in an individual born of a gouty father and suffering from retraction of the palmar aponeurosis. A rheumatismal form of paralysis agitans has been described, capable of being successfully treated by antidiathetic medication.

Dr. Carpentier, who has spoken of the frequency of arthritic antecedents in the insane, has particularly insisted upon hæmorrhoids.

But it is especially in gout that nervous troubles are frequent and deserve our attention. They may be manifested as premonitory symptoms of the attack of gout or remain entirely independent of the attack, or show themselves as phenomena of the abnormal, abarticular form of gout; others, on the contrary, follow the attack of gout, and seem to be developed chiefly when the evolution of the articular affection has been disturbed, either accidentally through the sudden influence of cold or through some ill-advised intervention. The latter belong to the groups, so varied, of retroceded gout. These metastases, all the more frequent when the gout is of longer date, are the most to be feared, by their abruptness and intensity, and death may result as their consequence.

These disturbances may affect the central and peripheral nervous system in all its functions: mobility, general and special sensibility, intelligence. Charcot has called attention to the fact that all the forms of cerebral rheumatism, cephalagia, acute delirium, and even mania, may be well-nigh exactly reproduced by gout.

Among the premonitory disturbances are often met vertigo, gastralgia, irritability of the bladder, migraine, asthma, etc. Among the neuroses that are sometimes connected with gout, epilepsy must be noted. By the side of the co-existence of epilepsy and gout in the same subject, we also find the combination of both these diseases in families. Fréré has reported some interesting examples of these facts.

The uric diathesis in women may be complicated by hysterical manifestations.

Stoll and Barthez have observed cases of so-called gouty chorea. Among other accidents of retroceded gout Scudamore cites spasm of the diaphragm and of the abdominal muscles. Various authors have observed cases of gouty apoplexies and gouty aphasias; Garrod cites a case of

facial paralysis, which ceased the moment an attack of gout supervened.

Gouty mania has been observed by Whytt. Among spinal affections in the gouty we must mention a case of progressive muscular atrophy seen by Dr. Potain.

Neuralgies are very frequent in the gouty, and migraine especially so. Among visceral neuralgias, gastralgia must be especially noted.

Besides these neuralgias mention should be made of the cramps, which precede or follow attacks of gout.

The gouty nature of neuralgias is sometimes clearly shown by the happy effects of treatment: thus Begbie gives the instance of sciatica in a gouty patient, which was cured by colchicum. Personally I have insisted upon the good effects I have obtained with salophen in the treatment of migraine and of the neuralgies of influenza. I shall soon take the opportunity of showing analogous effects in the treatment of sciatica.

Among sensorial troubles attributable to gout have been cited disorders of vision. Some authors speak of gouty ophthalmias.

Nervous troubles are also very frequent in diabetics and they show the closest analogy with those observed in the gouty. Independently of the nervous manifestations of diabetes, the latter may, in the patient, coincide with characteristic nervous affections.

I can hardly insist further. I believe that this review of the subject which might be extended to all the arthritic maladies, and especially to obesity, will demonstrate to the most sceptical the narrow relations existing between the arthritic family and the neuropathic group.

We must now examine the usefulness of this pathogenie conception.

In nervous pathology especially, if one wishes to reach a rational therapeusis, truly pathogenic, we must endeavor to bring back the diverse manifestations to general causes which, once understood, alone will allow of useful and rational intervention.

Physiological therapeutics, at bottom, do not differ from systematic therapeutics. In both the notion of the disease itself is eliminated, the idea of natural evolution disappears.

The imperfection of these methods is nowhere more strikingly shown than in nervous pathologym and especially in the treatment of neuralgias.

It is not sufficient that a substance should be considered as being analgesic to justify its employment in all painful manifestations. If it be true that pain is essentially one, it were hardly scientific to forget that from the etiological and pathogenic standpoint it possesses varieties of great diversity. It sometimes is due to an anæmic state, or may arise from a congestion or an inflammatory state, etc., of the nervous fibres or cells. This is not all. These are most frequently but immediate causes, bearing an affinity to more general causes. If we do not regard the constitutional state and all the pathogenic elements, we will, notwithstanding the clearest symptomatic and physiological indications, follow a wrong road and fail to obtain the desired effect.

Those analgesics which very often are prescribed without the slightest reflection, have for the greater part a well determined elective action. If salophen, the study of which we are especially engaged in, possesses an incontestable analgesic effect, it is because it possesses primarily an antiarthritic action, arthritism being under such circumstances, one of the essential factors of the element pain.

The name sciatic gout given to sciatic neuralgia especially puts in evidence the relations existing between the arthritic diathesis and this special neuralgia. It seems to me useless to weary my readers by prolonged compliations. Rheumatism gout, diabetes and obesity are the principal etiological factors of sciatica.

If the pathogenic questions which we have advanced are true, the therapy derived from them must afford the evidence and show their usefulness and value.

It would be easy for me to justify the ideas I have just advanced by personal observations. I will limit myself, however, to the relation of five unpublished observations, which my confrere Dr. Paul Walton has been kind enough to communicate to me. I desire to thank him for his great kindness.

Observation I. M. X., 30 years, suffered from rheumatis sciatica in the left leg since four years. The attacks, which are extremely painful, usually occur in the middle of summer and in the beginning of winter. Has never shown any symp-

toms of arthritism, but his father is gouty and has rheumatism. A brother has had mild attacks of gout. The first attack occurred after a stay at the seashore; each crisis is attended by a fever of slight intensity, but the very sharp pain persists from six to ten days, during which the patient is obliged to lie down, as the sitting posture, as is commonly observed, exasperates the pain. The patient has been subjected to nearly every form of treatment: revulsives, dry cups, massage, with aconitine, phenacetine. Salicylate of soda given with veratrim has given him some relief. This winter after the occurrence of a fresh attack he was given, from the first, salophen in the dose of four grammes a day, divided in four powders. From the third powder the pain disappeared as if by enchantment. The treatment was kept up for three days during which, as the patient no longer felt the slightest painful sensation he was able to attend to all his occupations, whereas formerly he was compelled to remain nearly absolutely quiet.

Observation II. Thomassin Leon, thirty-seven years, engineer, suffered since ten years from articular rheumatism. During a long sea voyage last December, he had a very violent attack of sciatica of the left leg. Being on a sailing vessel he could only receive the most primitive sort of attention. When I saw him for the first time, he was very lame, owing to a painful retraction of the thigh upon the pelvis. Very painful shooting pains follow the whole sciatic as far as the external popliteal. He was ordered a prolonged hot bath, and five grammes of salophen a day. On the next day the pain had entirely disappeared; the lameness also had nearly gone, and the patient now dares to extend his leg. The treatment was continued for four days. After this lapse of time the patient asserts that he no longer feels the slightest pain. A few days after he went to sea again on a prolonged voyage.

Observation III. Pauline Broecke, forty-three years, suffered several years with modular rheumatism of the fingers; since eight months has a right sciatica which does not give her a moment's rest. The right limb already shows a fairly marked muscular atrophy. Because of this I first advised massage; the patient returned after a fortnight saying that the massage did her more harm than good. I must here state the movements had been practiced by a confrere who has perhaps not mastered all the peculiarities of that specialty. As the patient insisted upon relief of her pain, I prescribed salophen in doses of five grammes daily, during four days. I also ordered prolonged hot baths. On the second day of the treatment the patient was seized with an erythematous eruption affecting the whole body; the sciatic pains had about disappeared, but reappeared on the fifth day. The patient, having attributed the eruption to the drug, has stopped taking it. Upon my advice she began taking the salophen again, but only in the dose of two grammes daily, and kept it up for six days. At this time the patient stated that she was entirely relieved. The lameness has greatly diminished but the patient still drags her leg. The cure has persisted since three months. We advised her to take salophen again at the slightest return of the trouble, but, so far, she has not had to have recourse to it.

Observation IV. Baertsoen, Adolphe, thirty years, carpenter. Presents no arthritic taint, either personal or hereditary. Suffers from a left sciatica since several weeks. The pain is nearly continuous, but is exaggerated by work, the patient, owing to the needs of his trade, being obliged to stand all day. He dates the inception of his trouble from a traumatism received more than a year ago in the gluteal region; in handling wooden beams he was knocked down by some of them and had his thigh caught under a very heavy board. Excepting for a few contusions which did not even compel a rest, the accident had no further results; but six or seven months afterward the patient daily felt, toward the end of his day's work, lancinating pains starting from the glutei and radiating as low down as the calf. The pain became more and more acute and ended by becoming constant. Revulsives and vesicants were applied, and at the same time he was given a variety of analgesics. On the days when the pain was most severe it could only be assuaged by injections of morphine.

Considering the patient's history and the fact that he had undergone a traumatism, the diagnosis of traumatic sciatica was made. This form, as is known commonly, requires some surgical treatment (stretching, etc). Notwithstanding this I tried salophen in this case, and I must say that, without having cured the pa-

tient, this drug in a daily dose of three grammes has given him a decided degree of relief for two or three days. The patient declares that on the days when he takes the medicine the pain is as well relieved as by morphine, and moreover, the amelioration lasts longer.

Observation V. Beeckman, Henry, fifty years, peddler. This man states that he suffered during his whole life with rheumatism. Wandering as he does about the country in all weathers and in all seasons, he has experienced many hardships. After the rigors of last winter, and lacking sufficient fuel in his dwelling, he has lately, besides his rheumatic pains, felt very painful sensations in the sciatic of of his left leg. I first gave him salicylate of soda in the dose of five grammes a day, as I wished to save him the expense which the relatively high prices of salophen would have entailed. In three days he returned, saying that the rheumatic pains had about disappeared, but that his thigh was no better. I then gave him salophen, and, after about a week, he stated that he was entirely cured and had not felt so well since many winters.

The very interesting observations of Dr. Walton greatly simplified my task.

Four of these patients are manifestly arthritic. The first has a decided heredity. The gouty and rheumatic father has bequeathed to one of his sons a mild form of gout and to the second a typical sciatica. If the theory I have developed is true, it is probable that the sciatic neuralgia which affects one of them will unfortunately prove but a first step in the painful road of neuropathy.

The second patient has articular rheumatism.

The third has nodular rheumatism since several years, and the fifth has had rheumatism all his life.

The relation between arthritism, represented by rheumatism and gout, and sciatic neuralgia, is here manifest; it is by no means always as evident as in these cases.

Last year I treated a patient suffering from a well-characterized hemicrania. He also had painful irradiations in the left leg, not completely localized, but quite evidently related to the sciatic nerve. The patient had very irregular digestion, with alternating diarrhœa and solid stools. At the period of onset of the neuralgic pains, his urine contained an abundant deposit of uric acid, an incompletely elaborated product showing the diathetic imperfection of nutrition. There were no other arthritic symptoms, the therapeutical results show in a most distinct manner the pathogenic relation I am considering.

All the patients treated by Dr. Walton have improved under the use of salophen. Four were cured, and one only improved. The latter had no personal or hereditary taint; his was a simple traumatic sciatica. The arthritic element was lacking, and in him salophen could not display the whole of its analgesic action. Hence we can affirm that: Naturan morborum curationes ostendunt.

I must yet insist upon one point observed by Dr. Walton. In the third observation we read that Pauline Broecke while taking salophen, in the dose of five grammes a day, showed on the second day a very marked erithema. The patient thought she saw a relation from cause to effect, and attributed the trouble to the salophen. Once rid of her sciatica she contracted a cutaneous eruption, or, in other words, one arthritic symptom was replaced by another.

Was the salophen here at fault? Dr. Vulpian* mentions several observations of cutaneous rheumatism under the form of scarlatini-form eruptions and of chronic urticaria. He also observed a case of papular erythema occurring in a patient suffering from muscular rheumatism, and Vulpian adds that it is much more common to observe papular erythema during the course of acute rheumatism than of muscular rheumatism.

In the presence of these cutaneous manifestations of rheumatism, one may well accept with reserve the accusations that might be brought against salophen. The most one might say would be that while salophen has been able to cure a painful arthritic manifestation, it has been unable to arrest the production of a fresh cutaneous arthritic phenomenon.

The importance of arthritism, which is exposed in this study, shows the important role that salophen is called to play in nervous pathology. Unsuccessful cases excepting in a few instances of defective administration, are for the most part due to an insufficient analysis of the various factors which act in painful manifesta-

*Clinique Medicale de la Charite. 1879.

tions. If salophen acts as an analgesic in the most diverse sorts of pain, one must not forget that it especially acts in those in which it is able to exert its antiarthritic action.

These therapeutic considerations will amply justify me in having dwelt so persistently upon the exposition of the relations that exist between arthritism and certain neuralgias.—*Flandre Medicale.*

CORRESPONDENCE.

IRRATIONAL TREATMENT.

EDITOR MEDICAL AND SURGICAL REPORTER:

Reading the case reported in the issue for March 28, 1895, of a patient rescued from death by aspirating the heart, makes some of us old fogies who have always kept the lancet bright, "a little" hot in the collar, when we also know, that one or more times each year for more than the third of a century, some one has given to the profession his experience of what the lancet could do for pneumonia and rheumatism.

Dr. Sloan tells us that, "from the 17th to the 22d fair progress was made," though "no great relief was got from the pains." A persistently high and varying temperature and no relief from pain may be a satisfactorily "fair progress" from the doctor's standpoint, but would the patient think so?

I thought that every observing, as well as every reading physician had learned that if salicylate of soda did not alleviate the pains of rheumatism within three days, it was useless to expect it to do so at all; and that it was equally useless to continue its use longer than seven days without an intermission, after which it may, though rarely, be resumed with benefit. Still the salicylate was increased, "and digitalis added to *strengthen* the pulse, which had been of *fair strength*, regularity and volume." There is science for you! The horse may be tired towards night, so do not spare either whip or spur in the morning.

Previous to the 24th, the symptoms, as given, strongly suggested venesection, but on that day demanded it, and the neglect of its use can be called hardly less than criminal. Had he then judiciously bled the patient, and followed that with appropriate treatment, he would not have seen that horrid picture he has pen-painted of a "livid, anxious countenance, palor of the lips, the working of the alæ nasi, the dilation of the veins of the neck and increased general restlessness."

It makes us hot. Still, we know that there are a few men who now use the lancet, who regarded it with little less than horror twenty years ago. And—and we "*hope the world do move.*"

Too many doctors get their knowledge of the actions of drugs at second hand, or as the public does its patent medicines, already prepared, put up and labeled, with "for full directions see inside of the wrapper." It is almost as easy as falling off a log, and saves an infinite amount of time and study. Had Dr. Sloan acquired a thorough knowledge of the primary and remote actions of the remedies by careful personal observation, he would not have prescribed antipyrine, salicylate of soda, nor salol, for he would have known that not a single one of the coal-tar derivatives was indicated at any stage of the—case as reported.

F. R. MILLARD, M.D.,

San Diego, Cal.

THE MEDICAL AND SURGICAL REPORTER

ISSUED EVERY SATURDAY

Address all communications to P. O. Box 843, Philadelphia, Pa.

HAROLD H. KYNETT, A.M., M.D.
Editor.

RODERIC C. PENFIELD
Publisher.

Editorial Offices, 1026 Arch Street, Philadelphia, Pa.

Entered as second-class matter at Asbury Park, N. J.

TERMS:—Three Dollars a year in advance. Sent four months on trial for $1.00.

REMITTANCES should be made payable to the Publisher only, and should be made by Money Order or Registered Letter.

NOTICE TO CONTRIBUTORS:—We invite contributions of value to the profession, and if published originally in THE REPORTER such will be paid for at liberal rates, or a limited number of copies of THE REPORTER will be supplied, as the author may elect. Hereafter where reprints are desired writers are requested to make a note of that fact on the first page of the MS., but must order reprints directly from the publisher, who will supply the same at cost rates. Contributors should inclose stamps for postage, that the articles may be returned if not found available.

SATURDAY, MAY 18, 1895.

EDITORIAL.

INSANITY.

During the latter half of the passing century, intelligent investigations within the realm of the mind have developed results, for scientific value and practical utility far in excess of the combined speculations of preceding eras in authentic history. Medical men and psychologists have brought to bear upon all phases of insanity, the wisdom acquired from devoted study and special opportunities for observation and experience, with the result that many old theories and most old practices have been relegated to the limbo of barbarism.

Certainly a great step and most humane has been the substitution of kindness for cruelty, and of care and gentleness for harshness. Under a broader and deeper public spirit, communities have developed a keener moral sense and have learned somewhat of the care and consideration due those suffering the most awful calamity of human existence. Philanthropic and economic considerations have joined with advanced knowledge to make more humane and successful the treatment of mental maladies, although, even now, the harsh regime is not a thing altogether of the past. Too often, we yet find under a single general superintendence (incompetent to manage any), the functions of almshouse, prison and lunatic asylum, with little of intelligent distinction made in the treatment of crime and of disease.

Study is wisely directed to causes, characteristics and methods of treatment. Amelioration and improvement of both physical and mental conditions are more carefully looked after. It has been demonstrated that the malady sometimes is capable of cure.

Interest in the problems raised by these mental and moral anomalies and disorders to which human beings are subject is not confined to a few specialists. The law attaches peculiar importance to the opinions of medical men who have the opportunity of observation upon the question of mental capacity.

With respect to the powers and facul-

ties of the mind, in reality, we can know nothing. We know them only as they find expression in action.

Every physician in extensive general practice has repeated experiences in this connection, and, with his prejudices and sympathies aside—and they should be aside in the interest of the public, justice and social order—he should, of all men, be the most competent to give a just, sound judgment and one not based upon hypothetical statements, but upon actual observation and experience.

"It is a well settled practice of our courts," says an eminent jurist, "to admit the opinion of educated, practicing physicians upon subjects of medical science.

"Until quite a recent period the disease of insanity has not been made a specialty. That it is now made a special study by a small number of physicians may be a good reason for giving to their opinion greater weight, but it is not a sufficient reason for excluding the opinions of other physicians. It is well known that various classes of diseases, as those of the ear, eye, spine, skin, lungs, kidneys and abdominal troubles have become specialties, especially in our large cities, where such division of labor becomes practicable. But this fact does not render incompetent upon these subjects the testimony of other physicians, who must necessarily have less experience. The difference is in weight rather than in the competency of the testimony. The far greater number of issues as to sanity fall within the ordinary range of a physician. A physician of large experience could scarcely be found who had not been often called to consider and form an opinion upon the capacity of his patients to make wills.

"Supposing the question was as to the gradual decay of the faculties of the testator from disease or old age, one cannot but see that the opinion of an intelligent family physician, familiar with his patient's infirmities and watching them at every stage of their progress, would and should have far greater weight with a jury than that of any number of physicians who had made insanity a special study, but who were called to give an opinion upon what is always, and necessarily, an imperfect statement of the facts and symptoms. Or, if the case were one of an original defective capacity, the judgment and opinion of the old family physician would be worth more than that of the masters of the science, who can have but a fragment of his history. To put upon the stand a skillful physician (and such an one has never understood the bodies of his patients unless he has known also something of their minds and the action of one upon the other), to get from him the history of his patient, the state of his bodily health, his conversation, his conduct, traits of character in sickness and in health, and then to exclude the opinion which, as the result of all, his mind has almost insensibly and necessarily formed; and yet upon this imperfect history of this patient, to ask a perfect stranger to that patient to give his opinion of his mental condition, because he has made mental disease a special study, would be to reject the most valuable evidence, for that which, in the nature of things, must be of far less worth."

Mental disorder or incapacity, as they are called in question, either in civil or criminal procedure, must for all legal purposes be judged by the manifestations in conduct or language. Symptoms of insanity, which only physicians can perceive and which have no apparent effect upon one's ability to transact business, are not enough to vitiate one's civil contracts, nor to enfranchise from responsibility for criminal acts. Sanity being the normal condition of the mind, the presumption always is that the party was sane at the time of doing or committing the act. This presumption stands until overcome

by a preponderence of evidence in favor of insanity at the time of the act.

There can be but little doubt that juries are sometimes misled, at the expense of justice and social order, by considerations raised by the testimony of some expert or specialist with some pet metaphysical theory.

The more certainly punishment is inflicted for violation of the law and breaches of social order; the more closely and scrupulously the question of insanity is looked into when made a plea of defense; the more soberly and conscientiously juries weigh the so-called expert testimony, the less we will hear of the plea of insanity, and proportionately less crime committed.

Mischief and failure of justice often lies in a careless, perfunctory and insufficient investigation of all the phases of a case by some theorist, some one with an hypothesis to support. Courts have hesitated in grappling with a question which has been claimed to be purely medical, and medical men have failed to agree or to clear the subject of its confusions.

It is somewhat encouraging, however, that medical as well as psychological science has repudiated many old theories repugnant to the safety to society and to the truth of science as well.

The courts have advanced to recognize diminished responsibility on account of abnormal conditions. Homicide in hot blood is not murder but manslaughter; and there may be circumstances which reduce murder from the first to the second degree. All this is correct enough and responds properly enough to the better dictates of humanity, but such diminished responsibility does not enfranchise the criminal and set him loose on society, too insane to be punished for crime and too sane to be kept in restraint.

Wise laws rigidly, impartially and judiciously executed, do much to enlighten and keep enlightened the mind, conscience and moral sense of the citizen. It is within only a comparatively recent period that insanity has been admitted as an excuse for crime. The danger now is that the field of irresponsibility will become so enlarged that few criminals will be convicted. There is some risk of too great broadening of the definition of insanity, both by courts and specialists; too much indulgence of morbid philanthropic sentiment, thus increasing the number of the class who set up insanity as a defense or excuse for criminal acts.

The history of many cases spread upon our criminal records furnish a wide basis of facts for the truth of "method in madness," so called.

The Use of Vaso-Constrictors in Cardiac Disease.

Wilcox (*Med. Record*) speaks of the value of vaso-constrictors in cardiac disease. In patients in whom the cardiac disease is secondary to disease of the arteries, vaso-constrictors are not indicated. In an under-compensated heart, irrespective of whatever valvular lesion may exist, we can, by the use of these remedies, exactly regulate the amount of work which the heart is made to perform.

Obviously, by narrowing the calibre of the peripheral systemic arteries and arterioles, we may increase the obstacle to the flow of blood, and thus to a nicety regulate that which the left ventricle is called upon to do. By thus regulating the work of the left ventricle we may set up hypertrophy of muscular tissue in its walls, and in this way bring about compensation. Not only does increased blood pressure result in more blood being sent into coronary arteries, but more efficient cardiac contraction, and a more rapid circulation in the cardiac muscles, thus improving the nutrition of the heart. If it be asked in what circulatory condition digitalis finds its most useful indication, it can be said, as Fothergill long ago pointed out, that it is when the pulse is rapid, broad, and of low tension. It is here that passive congestions are most frequently found, and hemorrhages are apt to occur. Digitalis is useful because it acts as a vaso-constrictor, slows the heart, thus prolonging the systoles more perfect.

SOCIETY REPORTS.

TENNESSEE STATE MEDICAL SOCIETY.

April, 1895.

INTRA-CAPSULAR FRACTURE OF THE HIP-JOINT.

(See page 689.)

DISCUSSION.

DR. PAUL E. EVE: I have not had any experience with the Senn apparatus, but I would desire to explain a device, which I believe is in some respects at least as good and simpler. It is a device by Simpson, of New York, and is very similar to the wire corset used in spinal diseases. It is laced upon the upper two-thirds of the thigh, and also around the hips, having, if you please, a well-adjusted pad to hold the trochanter major, that has the same purpose as the screw the doctor has represented in the chalk delineation. The object of this wire dressing is to be used after the plaster of Paris, which is supposed to encase the part as far as the knee. Of course a description of it would entail an exhibit to some extent of the appliance; that, of course, we do not care to do, nor could I make a very graphic description of it upon the blackboard. But it is new, and anything that offers anything in the way of union in these very unfortunate cases certainly ought to be had recourse to.

The doctor suggested that in some cases union was had, if not bony, a ligamentous one; and in many cases an incomplete one. I cannot agree with the gentleman, or go so far as to believe that in any number of intra-capsular fractures there is no union at all. Although I take the same ground he does, that in every instance where we have these hopeless cases, instead of thinking a certain time must be passed in bed with some apparatus until the callous thrown out is sufficient to protect the spiculæ of bone and then the patient be placed in a wheel chair and allowed to eke out a miserable existence, I believe, whatever the age of the patient or wherever he is, in public or private practice, in the country or in the city, we should insist upon immobility. We should insist upon an attempt to have bony union, ligamentous union, or whatever you please to call it. I have had recently in care a lady, ninety-two years of age. She was very intelligent, and after giving her the discouraging features, for such they must be called, of treatment and showing to her that very possibly she would die, she consented to the treatment and I got a union—what kind I do not pretend to say. It may be only fibrinous or simulating a bony union and hence termed ligementous. But she is able to walk on crutches now, although ninety-two years of age. I put the plaster of Paris casing on to the knee and up to the umbilicus, and had I not, she would probably be in the grave now. Immobility should be enjoined. In too many instances, I believe, if the let-alone treatment had been other than the mere suggestion that union would not take place and death would claim the individual in six or eight months, it may be, that with any advice, perhaps only the sand-bags, we would get good results.

The doctor has very ably advocated a treatment I have followed sometimes, that is employing, in old women or men, no difference what the age, a suitable device to enjoin absolute immobility. The results cannot be harmful with a proper device, whatever it may be. We have too many forerunners to show the bad or injurious effect of such treatment, and when they are contra-indicated they can be removed and perhaps some other device used instead. An encasement is needed in every instance, or a device of some kind, whether it be the Senn, with which I have had no experience yet, or something else. But we should insist upon an active treatment in every case. We don't know what we are going to get until we try.

DR. BAXTER: Closing discussion; The points I wished to call attention to and emphasize to my mind were very important. In the first place, the ordinary splint, or the ordinary routine treatment for intra and extra-capsular fractures. Intra capsular fractures with extra capsular splints, is wrong. You need something more in these cases than the treatment for extra-capsular fractures. I believe a result not usually attained could thus be obtained. It is our duty to immobolize the limb, to prevent those things which ordinarily occur in the very old from this fracture—the least of which is being entirely and completely bedridden; second, death from pneumonia; and third, fatty embolism, due to the absorption of these particles directly during the inflammatory period. I doubt whether any man who has lost an old woman from intra-capsular fracture and has failed to put her limb up, has not directly contributed to her death. This point to the aged is exceedingly dangerous, and the death comes in such a way as can be avoided by proper retention of these splints until the inflammatory period has passed by. Then if we have no union we can give them up properly.

My paper is a protest against the do-nothing policy. The dressing I have referred to is composed of iron woven into the plaster dressing, and has a screw to press against the

trochanter in the direction of the lower fragment. Senn's object was to counteract the effect of the loosening plaster after a day or two. Whether he so intended he does not affirm, but it does accomplish the retention of the fragments in cases where they were not retained before. Any case of intra-capsular fracture must have pressure in the direction of the neck, to overcome the action of the short thick muscles of the thigh.

J. S. Cain, M.D., Nashville, discussed a paper on

CROUPOUS PNEUMONIA.

DISCUSSION.

DR. THOMAS L. MADDIN: There are several points I wish the speaker had dwelt upon more exhaustively, and these points I shall present for consideration.

In the first place, I am not prepared to ignore the wisdom of past time. The question presents itself—the doctor did not discuss it, he took it for granted that the present day and age puts a negative conclusion in reference to this point, whether or not pneumonia can be aborted. When I commenced practicing medicine, a doctor would be thought a fit subject for a suit for damages if he was called to see a case of pneumonia in the early stage and didn't bleed it. I remember when I was attending lectures and listening to the distinguished Dr. Drake on this subject. Dr. Drake, on the subject of pneumonia, said: "Gentlemen, if anything can cure pneumonia it is depletion, venesection. To give you an illustration, I was called to see a gentleman for pneumonia. When I was called he was in the first stage. What was I to do? Let him sit upon the bed-side, or sitting up, bleed him to syncope. Bleed, gentlemen, to effect. And what is the effect. It is syncope. And what did syncope do? It stopped local determination to the seat of inflammation. It stopped all the pain, and if you stop all the pain, doesn't it help the patient and indicate the case if brought under the influence of the remedy?" In the '50s, nobody thought of attending a case of pneumonia in the early stage without venesection, and it was invariably to bleed to syncope; and syncope meant a stopping of determination to the seat of inflammation. If you stop local determination to the seat of disease and relieve the pain, you help your patient. Then what did they do? They gave opium, calomel and ipecac. They repeated this a few times and followed up with quinine. The patient under this treatment convalesced. You may say I am an old fogy! Well, I am not done with the bleeding yet. When Dr. Drake called to see the patient in the evening, and found the pulse full and pain present, what did he do? He bled him again to syncope and it took 20 ounces of blood to bring him to syncope. Well, is he going to get well now? Dr. Drake said he thought he would:

"I visited the patient in the morning and the fever was up again and the pulse high, and what did I do? Why, gentlemen, what could I do? I bled him again, and thought of course the patient would be convalescent when I came in the evening. But how was he in the evening? The pulse was rapid, there was difficulty of breathing, and fever, and I bled him to syncope again. And," said he, "gentlemen, if you will believe it, he died *notwithstanding*."

Gentlemen, that is the way to practice medicine. Stick to your convictions.

If the patient dosen't get well, it is not the doctor's fault. But, Dr. Drake may have been a little too absolute in his venesection.

I am going to talk along the line a little further. I am in favor during a storm, when there is danger, of throwing over-board all the freight in a ship you don't need. Therefore, I will throw overboard all the unnecessary blood in the patient, when he has plenty of it to spare; because, if you don't spare it, what will take place? It forms a great dam in the circulation of the lungs that presses the blood back. The blood cannot get through, and you drive it on through the inflamed lung. I am going to trim the ship for a clean run. What is going to take place if you don't bleed your patient, and, sometimes, even if you do. The patient, possibly, is going to die. And how is he going to die? Where is the tendency to death? If there is any stumbling block in the way, remove the stumbling block. If the man does come out crippled from the loss of blood, remember he can lose blood better than anything else. Men can lose blood better than money. It is the easiest thing to make blood, especially when you have plenty to eat. By bleeding, you enable the patient to assimilate better. Fresh blood is better than stagnant venous blood. If one lung, or a half of a lung, is involved, the entire volume of blood has to go through the lung; not through the diseased lung, for that is a stumbling block If I cannot remove the stumbling block, I will go around it rather than break my neck trying to go over it. I would bleed, in order to stop local determination and make the blood go slower, for the faster it goes the harder it runs against the stumbling block. You thereby have the oxidation increased. The danger is, if you please, edema of the brain; the danger is, if you please, over-distention of the right side of the heart; and in proportion as you have distention of any organ there occurs paresis of that organ. If the bladder is distended with urine one cannot urinate. You have to use a catheter. But you have no catheter to empty the right side of the heart when the heart is over-distended, the superior and the inferior venæ cavæ distended and the little capillaries distended. That distension reaches to the brain; and so far as that reaches you have a congestion; by a venous congestion you kill the vitality of the brain; and inasmuch, as you kill the vitality of the brain, you injure the capacity of the heart to contract. Wherever you have passive venous congestion, you have edema. Gentlemen, what is the best remedy right here? I would bleed the patient. If I have a patient whose bladder is over-filled, I can use the catheter and take the urine away. If I have venous blood doing no good but poisoning the pa-

tient and producing edema of the brain, don't you think it would be well to bleed and relieve the over-distention by opening the external jugular vein?

DR. C. HOLTZCLAW: In our section of the country, pneumonia is a comparatively rare disease. Pardon the personality, but this subject of pneumonia is quite a painful one to me. It is an unpleasant subject to me, for the first four cases I had when I entered upon the practice of medicine, were pneumonia and every one of them died promptly. There seemed to be an epidemic of pneumonia in the neighborhood. The fifth case was also one of pneumonia, but was saved from an untimely death by an accident. The patient drank 36 doses of tartar emetic, which I had ordered for the depletive effect.

Without making any remarks or comments upon the pathology of the disease, I want to present one idea as to treatment. It is an idea I got from one who was the finest physician, the most careful observer, the best therapeutist and the most successful man in the treatment of pneumonia that I ever heard of. His treatment was the administration, as soon as possible, of a teaspoonful of calomel.

Venesection has gone out of fashion, and we bleed the patients differently now. Whether the large doses of calomel (60 to 150 grains) were given to deplete, I do not know. In the second stage, of course, it would not be advisable to give it. Then other treatment is called for. But, in the early stage of pneumonia, after the administration of 60 or 100 or even 150 grains of calomel, the next morning you will be surprised to find that the pulse has gone down, the pain becomes less and the temperature lower. But this is not to be repeated. In the old bleeding process, within 12 hours the process is reported, but with calomel this does not occur. Don't take the trouble to weigh it out. There is no danger of the calomel remaining in the system. It will take care of itself. It does no harm, I can assure you. I have never had a death from pneumonia under this treatment, and you will always find it extremely satisfactory.

DR. W. D. HAGGARD, Nashville: I wish to endorse what has been said as to the ability of the physician to abort pneumonia. However, I believe it can be done more effectually than in the way Dr. Maddin has outlined. Given a man such as he described—a stout, healthy man, with a full, bounding, quick pulse, pain and hyperexia, then bleeding to syncope is a most valuable part of treatment. I believe there is nothing we have ever had comparable to bleeding under such circumstances. I believe it is unfortunate for the world that venesection has virtually passed away. I believe it would be well if it were restored to its former position in the practice of medicine. But, after the first venesection I could not repeat it, as did Dr. Drake, or as did Dr. Bartholow when I was a student, because I believe we have a better remedy in the heart sedatives. You may commence with the heart sedatives after you have once depleted the system by withdrawing twenty ounces of blood, or you need not use the blood-letting at all, but commence at once with the heart sedatives. I feel confident, in this way, pneumonia has been aborted. The patient should be brought thoroughly under the heart sedative, whether in the form of a venesection or in the form of the tincture of aconite or tincture of veratrim viride. What you want is to reduce the pulsation of the heart; you want to relieve the great blood-pressure.

I should certainly prefer the heart sedatives to the frequent repetition of blood-letting, and I put myself upon record as very much averse to the practice referred to by the distinguished gentleman last upon the floor. That practice would not be endorsed at this time.

I arose to put myself upon record as believing pneumonia can be, has been and will be aborted; and the better we understand the pathology and therapy of the disease, the better we will be able to abort it. This is best done in the first stage.

DR. J. A. WITHERSPOON, Colnmbia:—Pneumonia, being one of the most common diseases we are called upon to treat, and one we more frequently disagree upon, possibly, than any other, should attract attention in any medical body. I must disagree with most of the gentlemen. I don't believe that the ideas, so prevalent here to-day, in the treatment of pneumonia, should be exercised in any one case. Pneumonia is a disease that is liable to attack people of different constitutions, and the patient should be treated more than the disease. I do not think it is wise for us to outline or map out any line of treatment in pnenmonia.

I agree with Dr. Maddin's idea of venesection, but I should limit it to a few cases—the plethoric—those full of blood, where I believe it may be applicable. But I don't believe that in pneumonia, blood-letting for pain in necessary. I do not believe pain is a symptom, especially of croupous pneumonia. It is an indication of a complication of that disease.

Further, I would differ from Dr. Cain. I don't believe bronchial breathing is a symptom of the first stage in pneumonia, but that it is a symptom of red hepatization, or the second stage. I understood the doctor to outline certain pathological findings, how they were produced and why they produced certain symptoms. I believe he claims the inflammation does not produce the exudation. I believe the inflammation, or the inviting of blood to that part and the production of a hyperæmia of that lobe, is the result of the specific cause of pneumonia itself, and it is this irritation which invites the blood to the part, produces a dilatation of the capillaries and hyperæmia and the accumulation of fibrinous material. We have, in the first stage, a stage of engorgement, as the doctor said. What does the engorgement mean? It means the blood-vessels are filled with blood. Next is the stage of congestion, when, by the diapedesis of the serum of the blood, the fibrinogen being acted upon by the fibrin ferment forms the exudate that takes place in the air vesicles, and forms the exuda-

tion that is to follow. Now, until that exudation and until those air-vesicles are filled, you will still have a roughness, or vesicular breathing. But when that is closed, then through the solidified lung you will hear tubal breathing. I claim the tubal breathing is found in the second stage. What is the crepitant rale due to? The Doctor explained that it was due to a sticky exudate formed, an inflammation of the part, and the pulling of it apart, as it were. If you have a pulling apart of the vesicles, you have a vesicular and not a tubal breathing. I grant you the tubular breathing is symptomatic, but I believe only of the second stage.

I believe in the use of digitalis. It seems to me it would be extremely bad policy for us to use a drug that acts upon the heart only by stimulating the inhibitory nerve center, which, by laying its inhibitory hand upon the heart shortens its beat and carries more blood to the vascular system in the lung. Therefore, I do not believe digitalis is applicable to the first stage, but it is applicable to the second stage, especially because we have the breaking down of the exudation. It is then you want a slow, deliberate beat to throw the blood and open up the vascular channels that have been closed. Then is the time, and the only time in my humble opinion, we can afford to use digitalis in the treatment of pneumonia.

As to the red hepatization, or the third stage. I cannot understand how it is possible after the exudation is produced, for us to cut it short. The stage of red hepatization does not last long, at any rate, but passes to the gray hepatization very rapidly. It is the hurrying of this stage we desire. It is in this stage I have gotten my best results from the use of the blister. I use the digitalis and strychnia to stimulate the heart.

One other question in the treatment of this disease. Dr. Cain recommends the use of syrup of ipecac and various remedies at this stage to assist in getting rid of this exudation. To give ipecac and such remedies in the third stage, when there is need of strengthening of the action of the heart, of perfection of the action of the stomach of thorough assimilation of nourishment, in my opinion, is not well directed treatment. One remedy, which has a bad effect upon the stomach, however, in some cases, is the iodide of potash. I like the iodide of potash, I like, in the first stage, the cotton jacket over the chest and then, if I have tardy resolution, I bring to my assistance the blister. In the condition of heart clot, I have been struck with the propriety of a suggestion by one of our Southern men, of intravenous injections of salt solution just as you treat shock. This is used by a physician in Birmingham. When the pulse has become very feeble, the nose open, the eyes sunken and the cheeks prominent, he uses a 2 per cent. solution of salt, and the pulse rises almost as if by magic. I have never tried it, but I was struck very favorably by the method. With that, and believing that each case should be treated on its own merit and according to the conditions found in the case, under no routine. I consider we have the best means of meeting and combatting this disease.

Dr. G. A. Baxter, Chattanooga: Concerning the danger of heart-clot in this disease. Dr. Cunningham, of Chattanooga, reported 92 dissections of croupous pneumonia, and in about 50 he found, and exhibited at the Tri-State Medical Society, heart-clots.

Dr. Crook, Jackson: I can endorse what has been said about pneumonia being aborted. It is plain to me that any acute inflammatory affection can be held in check if you hold down the temperature of the body.

Another thing the essayist did not refer to, although he went over almost the entire field: He did not speak of the use of alcohol; nor has that been mentioned. I have frequently, as Dr. Cain said, changed my opinion, but it does seem to me we can get along better without alcohol than with it. My mainstays are digitalis, strychnia and quinine.

Dr. S. W. Sanford, Union City: I wish to relate an experience. I never saw a case more thorpughly aborted, than one which took thirty drops of croton oil; and he didn't die, either. Another point. Dr. Cain in enumerating the antipyretics, I believe, overlooked the one that in my opinion is the best of all, that is Salicylate of ammonia. With it you get all the antipyretic effect desirable without the bad effects so often experienced from the coal-tar remedies.

Dr. Deering J. Roberts, Nashville: Much has been said about venesection, but I think, with the ideas I have of pneumonia, the proper views of venesection have not been taken. The gentlemen who advocate it look forward to it just as was done forty years ago to bleed some, to bleed again; others would limit it only to full, plethoric individuals.

It is not so much the individual as it is the time when you perform venesection. If you can bleed the patient in the stage of hepatization, the patient has already bled himself into the cavities of the lnng. A lobe of the lung will hold a pint to a pint-and-a-half of blood. Therefore, a solidified lobe will contain, perhaps, a pint or a pint-and-a-half of blood. Later in the stage, a little bleeding may take some off the lobe, but one must be cautious in late bleedings, and they must be limited in amount. Hepatization commences at one spot and gradually extends. You have to watch it closely; and you may not be called until solidification has taken place. You can then only, at some future day, take some off the lung. I care not how old or young, how weak or strong the individual may be, if you can diagnose the disease in the stage of hyperæmia before there is any great solidification, bleed according to the amount of vascular supply in the individual and you will do more towards arresting the disease than by any remedies we have. The pendulum swung too far when bleeding was entirely stopped. I cannot but think, from my experience and observation and from the observations of others with more experience than myself, than in the past thirty or forty years many lives have been lost from pneumonia

because we have not used the time-honored lancet.

A gentleman who has often raised his voice and wielded his pen in favor of this remedy, Samuel D. Gross, read before the American Medical Association, an excellent article, on "A Lost Art in Medicine." He laid stress upon the time the lancet should be used. You must bleed your patient before he has bled himself.

In the early stage of pneumonia, or the state of hyperæmia, what sounds we have? Before dullness or crepitant rales come on, there is increased resonance with absence of the ordinary murmur. In the stage of hyperæmia, the blood vessels have distended and made tense the alveoli of the lung over a limited area. In other words, you have exudation in lower lobe. I have noticed this repeatedly. It commences usually below or in the middle lobe, but may be in the upper lobe, and when, perhaps a half of the lung has been lost, it is too late to bleed except you find the right heart struggling with too great a load; then take out blood until the vitality of the patient, with the other remedies, will eliminate the material from the lung.

I wish to endorse what has been said as to iodide of potash. Some 18 or 19 years ago, Dr. Flint advised the use of the iodide of potash, but did not give any reasons. I tried it in large doses, and to my surprise the bronchial tubes cleared up almost as if by magic. Since then I have been using it in pneumonia. Instead of waiting day after day using stimulating expectorants to get rid of the refuse matter, I put the patients upon full doses of the iodide of potash, five to ten grains, three or four hours apart. And what is the result? The lungs become cleared up. It acts as a resolvent. The material is absorbed. I regard it as of invaluable use in this disease. Strychnia and digitalis I reserve for use in the later stage of protracted cases, for maintaining strength from vigorous cardiac systole in preference to the frequent, rapid systolic movement that wears the heart out. As for blisters, I rarely use them. Warm fomentations to the chest, a hot bran bag, hot poultices made slightly stimulating by mustard, if you please, and capsicum, are of use over the side involved, and have an advantage in the relief of pain through the anodyne influence of the heat. In protracted and stubborn cases, where in spite of all remedies the lung would remain solid or approach to purulent exudation. I have occasionally seen valuable results follow the use of a large blister. Where I begin to dread that, or apprehend it is close at hand from the duration of red hepatization, I resort to the full large blister, getting rid of it as quickly as possible afterward, with very satisfactory results. I know a number of gentlemen, fairly successful in the treatment of pneumonia, who blister at once. I do not like to blister at once, because it keeps me from interpreting what is going on.

Dr. N. C. Newman, Normandy: The statement by the gentleman who has just taken his seat, that it is not necessary to bleed a patient who has already bled himself, is not according to my view. In a plethoric individual, with the lung solidified, you are very likely to have edema of the brain, and for that reason bleeding is indicated. If you have edema of the brain, in all probability you will not be able to overcome it with anything short of bleeding.

In reference to digitalis. Some of the gentlemen prefer strychnia and some object to the use of digitalis. One of the great sources of death in pneumonia is heart failure. Now, in the later stages, when the heart is enfeebled, digitalis slows the action of the heart, strengthens its systolic force, gives greater time between the beats of the heart, allows the ventricles to fill better, stretches the vital India rubber of the aorta and feeds the heart through the coronary arteries, which are the only arteries in the heart whose beat is synchronous with the beat of the heart. As the heart is strong in its force, having been properly fed after the use of digitalis, it is better able to do its work. So we give digitalis not only for its effect as a nerve stimulant, but also for its nutrient effect, especially its secondary effect. If you have depleted your patient by venesection in the beginning and are afraid of heart failure, you must enjoin the recumbent posture and give digitalis in small doses, very frequently repeated, for the secondary and nutrient effect.

Dr. O. C. Omohundro, Nashville: I prefer the iodide of ammonia to the iodide of potash, and think it fills the indication better. A remedy more recently suggested is simple bicarbonate of soda. Those are the only remedies I can think of besides those that have been already mentioned.

Dr. T. J. Happel, Trenton: There is one feature of this paper upon which I want to congratulate Dr. Cain, namely, the fact that he does not accuse the wonderful microbes of producing this wonderful disease. It is about the only disease in the discussion of which, in the Tennessee State Medical Society, I have not heard attributed to the microbes. It is true the essayist said one of the theories is it may be due to a microbe. But I want to congratulate him. I think the microbe is sent there to clear out and not to produce the disease. Food is furnished in the lung where it grows and the microbe is intended in this case, not as a disease-producing or disease-causing agent, but as a simple curative agent. It helps eliminate the material from the lung. Dr. Witherspoon struck a feature I wish to emphasize, too. That is, it is the patient and not the disease we have to deal with. I have always believed that if I find a case of pneumonia suitable for bleeding, I shall bleed it. I have practiced medicine in Tennessee for quite a while, but have not as yet found that case. However, if I do, I will bleed it and bleed it freely.

I wish to mention a case I had been treating for pneumonia and dismissed as relieved. He took a severe cold and developed a double pneumonia, as I believed from the history. When I was called I found the vessel by the side of the bed half full of blood, which they

said was half of what the patient had expectorated that night. The lung was greatly cleared up by the bleeding. The point I wish to make is that we do not see these patients in time to bleed them. We ordinarily see them in the second stage, after the time for bleeding has passed.

We can abort the disease, as suggested by a previous speaker, by the use of veratrim viride. I do not rgree with Dr. Holtzclaw as to the value of large doses of calomel. We rarely see cases of pneumonia in the first stage and don't get too much for the patient. In the stage of hepatization there is no time for bleeding. Nature will do the work there very well. You may have to control the temperature. In the third stage, although a large number of cases will get well without treatment, if treatment is demanded medicinally, we need digitalis and strychnia. I agree with the preference for iodide of ammonia to the iodide of potassium. I do not believe in expectorants—squills, spices, sanguinaria and things of that kind—and I only give them where there is a prejudice in the neighborhood, and then I tell I am not in favor of them. If you keep your patient in proper condition the material will be taken up by the absorbents. It is not intended the material shall be thrown off by expectoration. Let your patients alone; don't disturb your patient's stomach; tone him up. If the lung does not clear up rapidly, I would then, and then only, apply the blister. I would keep the surface reddened, preferably by turpentine steepes, or by the use of the mustard plaster. These I use, protecting the chest, of course, from changes in temperature when removing the application.

Dr. J. D. Plunket, Nashville: The fact that a disease has so many names as croupous, fibro or lobar-pneumonia, tells us the cause of that disease was unknown to the earlier clinicians and pathologists; but I believe when I say croupous pneumonia is a microbic disease I voice the ideas of most bacteriologists. Finding the specific cause of the disease; cultivating it throngh several generations; then inoculating animals and producing the disease, typical in every manifestation. I think if this exists in some 95 or 96 per cent., it has great weight in determining the cause of the disease. But, in respect to the older school—those who have laid great stress on the influence of cold producing this particular kind of pneumonia—it does seem there might be something in the idea. Whether or not there is, remains for the future to reveal.

hen this disease attacks one individual in a family and then another and another member, until the entire household is prostrated with the disease, independent of age, condition of life, hygiene, and everything taken into consideration it confirms or strengthens the belief that croupous pneumonia is of a microbic or specific origin.

As to the treatment of pneumonia I have but a few words: When anybody becomes a routinist in the treatment of any disease, whether it is croupous pneumonia or any other, I believe that medicine is not his harvest field. You take a child prostrated with acute inflammation and the whole of one side below par; you don't think of bleeding an individual like that. You will not apply a blister to a very young child; I don't do it myself. But here is a disease where I believe every case is a law unto itself. You have an individual with a strong acting heart, bounding pulse, flushed face, a little pleurisy and perhaps a little pain which annoys him. Bleed him and he is relieved from the inconvenience which he suffered.

It has been said that pneumonia is the great enemy of old age. How often are we called to see an old person, presenting no well-marked symptoms of pneumonia, with a little rise of fever, say to 101½° or 102° accelerated respiration, may be; no cough, pulse possibly a little accelerated? The patient grows rapidly worse, sinks, dies and at the post-mortem find a croupous pneumonia, involving either the greater part of one lung or one lobe or the croupous process attacking isolated spots in both lungs. If we take the disease in the adult, say eighteen to thirty years of age, we will see the typical manifestations of fibrous-pneumonia. But take it in children, two to four or five years old, as we have seen it many times, and the little child, apparently perfectly well, will go in and tell his parent, "I am sick"; he develops a little cough, butdoes not expectorate; there is accelerated pulse and respiration, and a high temperature. We should examine the condition of the lungs, as to the presence or absence of croupous pneumonia, because we often find it in children without the usual signs of the disease.

Dr. J. S. Nowlin, Shelbyville: There is a discrepancy in the theory of the gentlemen who hold that pneumonia is caused by a microbe, yet advise a line of antiphlogistic treatment. Now it is either true that pneumonia is an inflammatory disease, from the result of inflammation, or it is the result of a specific disease. If it is the result of a specific disease, it should have specific treatment, such as is germicidal and will remove the cause.

Dr. W. K. Sheddan, Williamsport. The subject has been discussed seemingly with the idea that an inflammatory condition could not be due to a micro-organism. I believe all inflammatory conditions are due to micro organisms. I am fully satisfied, from my observations, it is due to a micro-organism, and that the micro-organism has been very well described by Dr. Sternberg. It has been said that edema of the brain is due to passive congestion. I think the cerebral conditions, said to be due to edema, more are due to the action of the toxines than to any edema. I believe the irritative action of the toxines will explain this condition fully. One proof it is due to some germ or to something constitutional, is the fact we frequently have the most marked constitutional trouble as complications.

I notice in connection with the discussion of this subject the frequency with which gentlemen have alluded to the ability to abort. I wish to be recorded as believing that no case of true croupous pneumonia on

God's earth was ever aborted by any line of treatment. The fact we have no specific to destroy the bacillus of pneumonia is not a proof it is not a germ disease. We have no specific to destroy the bacillus of tuberculosis; we have no specific to destroy the bacillus of anthrax; we have no specifics to destroy a number of these bacilli, but that is no objection to the germ theory. When we find something to eradicate the bacillus of pneumonia, then they may talk of aborting; but it is useless to talk of aborting by venesection or anything of that kind. I would certainly, in any stage of this disease, most assuredly condemn cardiac sedatives. As I understand Dr. Cain's position, he regards the red hepatization as part of the first stage, and therefore he would find the condition he stated.

The use of ipecac has been objected to, but the gentleman immediately afterward recommended a blister, which would irritate the already worn-out nervous system, and for what? I have never been able to see any indication in this disease, in any stage, for the use of blisters. I think the comment upon Dr. Cain's ipecac much out of place if one is going to use blisters.

I treat every case according to the indications of the individual case.

Several years ago I was very much impressed by the idea of the use of cold compresses over the area of the lung. Two years ago I had the fortune to see a case of pneumonia in the early stage, that of hyperæmia, and I enveloped it in ice bags. My brother, following my suggestion, did the same thing with a number of cases. In some twenty cases we used the ice bags with absolutely no mortality.

DR. W. A. H. COOP, Nashville: I believe, reasoning from analogy, pneumonia is caused by some germ. I believe the mental depression and all that is created by the toxines, and the influence upon the heart probably has the same cause. The same cause may be an explanation for the presence of the leucocytes.

DR. J. S. CAIN (closing discussion): We have had every variety of treatment suggested, from full doses of calomel, thirty drops of croton oil, venesection, to very little of anything and not much of that. So you see there is a great variety of opinion about this disease, and it it a disease about which we, as a profession, are not agreed.

I did not undertake to discuss the microbic origin of pneumonia, but simply alluded to it and said I did not have time to discuss it.

A deal has been said about aborting the disease, blood-letting especially. I have nothing to add to what I said in the paper about blood-letting. I believe there are some few cases in which blood-letting is the thing to do, but I believe tartar emetic and blood-letting are not indicated in a great many cases. A great many patients when bled, even when blood-letting is not indicated, will get well, but I believe that is not rational treatment in one case out of a hundred. Like Dr. Happel, the case for blood-letting has not come to me for a number of years. Yet I would not disapprove of it in proper cases. Dr. Witherspoon took me to task about a physical sign. I said bronchial respiration is one of the first signs of bronchial or croupous pneumonia. I adhere to the opinion. Just so soon as the parts become engorged and the tissue loses its porosity it becomes a better conductor of sound and conveys to the ear of the diagnostician the sound of the air passing in and out of the tubes. When solidified it is a still better conductor. I find bronchial respiration before I find bronchial crepitation. It is the first sound.

I am sorry more was not said about the use of digitalis in the early stages of croupous pneumonia. I said in my paper I could not explain the reason why it should be used, because it seems to be contra-indicated, since it is a heart stimulant, and we want to use remedies to lower the heart's action. However, it not only stimulates the vaso-motor system, but also the inhibitory; and while it propels the blood with more force, it creates a space on the other side for the blood; keeps pure blood moving through the lungs and prevents stasis. I do not know any other explanation for it, but I believe it is one of the best remedies in the early stages of croupons pneumonia.

PERISCOPE.

IN CHARGE OF WM. E. PARKE, A.M., M.D.

MEDICINE.

A New Method of Making Palatable and Digestible Milk.

Dr. Robert T. Edes, of Boston, gives a valuable way of preparing milk where other methods have not proved useful:

A pint of milk is gently warmed. Into it is dropped, very slowly and with constant stirring, about twenty minims of the dilute hydrochloric acid of the United States Pharmacopœia. The milk should be stirred until it cools. In this way a very fine flocculent coagulum is produced, floating in the whey, which is easily accessible to the digestive secretions, while the whole fluid has lost somewhat of the flat and cloying taste which makes it unacceptable to so many. It will be noticed that milk prepared in this way differs from the various "wheys" in the highly important particular that the casein is retained and used, instead of being separated out as a distinct product, while it avoids the bitterness of pancreatinized milk.—*Boston Med. and Surg. Jour.*

SURGERY.

Effects of Modern Rifle Wounds.

The London correspondent of the *American Practitioner and News* writes that Prof. Victor Horsley has given an interesting lecture on the "Effects of Modern Rifles." First, Dr. Horsley showed some photographs of bullets in flight, demonstrating that in front of every bullet is a parabolic curve of compressed air, while behind it there are a series of little eddies of air rushing into the vacuum created by the flight of the missile. A tin canister was taken, and a ten-grain bullet having a velocity of 3,800 feet per second fired through it. There were two small holes in the canister. Then the lecturer filled a canister with some wet, soft substance, put on a lid and fired again. The lid of the canister flew off, showing that the bullet in its passage caused the hydrodynamic effect to be communicated right to the outside particles. An empty skull was then fired through, two small holes being the result; then a skull filled with water was treated in the same manner; this time the skull splintered and gaped. Dr. Horsley said these demonstrations showed that when a bullet is fired through a brain the substance is forced in all directions with violence and great pressure against the skull. Prof. Horsley has demonstrated by experiment that after the shock of a bullet through the brain the heart will begin again irregularly, spasmodically, but still it will begin again. The lungs will not. In his experiments the action of the heart and lungs of an animal were indicated by a system of pneumatic tubes and levers upon a chart. An animal under ether had a shot fired at it so as to glance off the skull. Both lungs and heart continued working unchanged. Then a shot was fired through the brain. This time the heart continued to go on irregularly, but the breathing ceased. The net result of these and other experiments was to show that, provided the action of the lungs could be restored, an animal might be shot through the brain and live. The brain with a passage forced through it is still pressing heavily against the sides of a skull. This must be relieved by trephining, and the conclusion arrived at by the professor is, that if a man were shot through the head and were treated first as if he were a drowned person until such time as trephining could be performed, his life might be saved.

BACTERIOLOGY.

The Transmission of Tuberculosis by a Brass Horn.

Dr. Addison S. Thayer, in the *Journal of Medicine and Science*, reports the cases of three young men, whose family history was good and who were themselves physically sound, who became infected with tuberculosis by using, as members of a brass band, a second-hand horn hired from a dealer. The possibility of tubercle bacilli being deposited in the convolutions of a horn to the danger of subsequent players cannot be denied. The three users of the horn in question were the only members of the band who did use it. Two of them are now in Colorado and one in Southern Pines under climatic treatment for tuberculosis. To make the chain of evidence complete it is only necessary to take the horn to pieces and find tubercle bacilli in the dried spittle in its convolutions and joints.

OBSTETRICS.

Pregnancy After Ligation of the Fallopian Tubes.

At the December meeting of the Glasgow Chirurgical Society, Drs. Murdoch Cameron and R. M. Buchanan, made a report upon the clinical history and post mortem examination of a case where pregnancy occurred after ligation of the tubes.

Two years before this conception the woman had been delivered by Cæsarian section of a healthy mature child. Dr. Cameron tied the tubes at that time. Four days after the last Cæsarian section the patient, who was a dwarf and rachitic, died of peritonitis, and the post mortem examination was made by Dr. Buchanan.

The right fallopian tube showed the constricted portion without any trace of lumen, while the left was pervious throughout, although the canal was much narrowed and the plications atrophied and irregular.

Dr. Cameron said that this was the first case in which he had ever found pregnancy to occur after ligature of the tube, and attributed the fact in this instance to his failure to tie the ligature sufficiently tight. He thought it would be especially dangerous to remove the ovaries at such a time when the veins were enlarged and sepsis might so easily be introduced, and therefore was accustomed to rely upon ligation of the tubes. In his last case of Cæsarian operation he had taken the precaution of putting on a double ligature, cutting between, and making such a separation that he did not think union could possibly take place.

Dr. Hector Cameron said he would not have thought *a priori* that a silk ligature would have permanently obliterated the fallopian tube. There was no analogy between that and an artery. It was fashionable nowadays, when tying an artery, not to try to sever the inner and middle coats; but he himself always did try to do so, and when that was done the reparatory process which followed was almost certain to obliterate the artery at that point. There was no analogy to this in the case of the fallopian tube, and it had always struck him that the method which Dr. Murdoch Cameron had described for his last case (double ligature and dividing between) was the right one and ought to ensure success.

The Cold Bath in Puerperal Septicemia.

Mace (*Archives de Tocol et de Gynec.*) strongly advocates this treatment. He has

collected seventy-four cases. They include seven deaths—three from peritonitis, one from pyemia, one from exhaustion after a long shoulder-presentation labor, and two from severity of the infection; the baths were given with too much timidity. The cold bath is contra indicated when peritonitis, phlegmon of the broad ligaments, or phlegmasia dolens exists. It has proved successful when grave maladies, such as measles, erysipelas, eclampsia, or bronchitis have complicated the puerperal infection. The obstetrician must not delay treatment when high temperature and general constitutional disturbance have set in. First of all, he must make sure that the uterus is free from products of conception. Then, should the temperature rise over 101°, the bath must be used. It is often of value when the temperature is low, the patient already suffering from headache and hot skin. The bath should be a little over 75° F. as a rule. Mace insists that it is right to leave the patient in till she shivers, especially when hyperpyrexia is the most marked symptom. In other respects the same precautions are needed as in typhoid fever. Subcutaneous injections of caffeine or sparteine should be given before the bath when the symptoms are severe, so as to counteract the tendency to syncope.

ARMY AND NAVY.

CHANGES IN THE U. S. MARINE HOSPITAL SERVICE FOR THE FIFTEEN DAYS ENDING APRIL 30, 1895.

Fessenden, C. S. D., Surgeon; detailed for duty on Board for Examination of Officers Revenue Cutter Service, April 17, 1895.

Hamilton, J. B., Surgeon; granted leave of absence for 12 days, April 20, 1895.

Stoner, G. W., Surgeon; detailed to represent service at meeting American Medical Association, April 25, 1895.

Mead, F. W., Surgeon; detailed as Chairman Board for Physical Examination Officers Revenue Cutter Service, April 17, 1895.

Banks, C. E., Passed Assistant Surgeon; when relieved to report at bureau for duty as Chief of Purveying Division, April 24, 1895; granted leave of absence for 14 days, April 29, 1895.

Williams, L. L., Passed Assistant Surgeon; detailed for duty on Board for Examination of Officers Revenue Cutter Service, April 17, 1895.

McIntosh, W. P., Passed Assistant Surgeon; detailed for duty on Board for Examination of Officers Revenue Cutter Service, April 17, 1895.

Kinyoun, J. J., Passed Assistant Surgeon; detailed to represent Service at meeting American Medical Association, April 25, 1895.

Woodward, R. M., Passed Assistant Surgeon; to proceed to Ashtabula, Ohio, as Inspector, April 19, 1895.

Wertenbaker, C. P., Passed Assistant Surgeon; granted leave of absence for 10 days, April 16, 1895

Brown, B. W., Passed Assistant Surgeon; detailed as Recorder Board for Physical Examination Officers Revenue Cutter Service, April 17, 1895; granted leave of absence for 20 days, April 23, 1895.

Stewart, W. J. S, Assistant Surgeon; to rejoin Station at Washington, D. C., April 20, 1895.

Prochazka, Emil, Assistant Surgeon; to proceed to Evansville, Ind., for temporary duty, April 29, 1895.

Thomas, A. R., Assistant Surgeon; granted leave of absence, April 17, 1895.

NEWS AND MISCELLANY.

Deer Park on the Crest of the Alleghenies.

To those contemplating a trip to the mountains in search of health and pleasure, Deer Park, on the crest of the Allegheny mountains, 3,000 feet above the sea level, offers such varied attractions as a delightful atmosphere during both day and night, pure water, smooth, winding roads through the mountains and valleys, and the most picturesque scenery in the Allegheny range. The hotel is equipped with all adjuncts conducive to the entertainment, pleasure and comfort of its guests.

The surrounding grounds, as well as the hotel, are lighted with electricity. Six miles distant, on the same mountain summit, is Oakland, the twin resort of Deer Park, and equally as well equipped for the entertainment and accommodations of its patrons. Both hotels are upon the main line of the Baltimore and Ohio Railroad, have the advantages of its splendid Vestibuled Limited Express trains between the East and West. Season excursion tickets, good for return passage until October 31, will be placed on sale at greatly reduced rates at all principal ticket offices throughout the country. One way tickets, reading from St. Louis, Louisville, Cincinnati, Columbus, Chicago, and any point on the B. & O. system to Washington, Baltimore, Philadelphia or New York, or vice versa, are good to stop off at either Deer Park, Mountain Lake Park or Oakland, and the time limit will be extended by agents at either resort upon application, to recover the period of the holder's visit

The season at these popular resorts commences June 22d.

For full information as to hotel rates, rooms, etc., address George D. DeShields, Manager, Deer Park, or Oakland, Garrett County, Md.

—4-t. CHAS. O. SCULL,
General Passenger Agent,
B. & O. R. R.